HARMONY AND EAR-TRAINING

W. A. WHITE

Ruth Lisa Hummel.
Denver University,
June 1 — July 30 — 1920.

THE LIBRARY
BRIGHAM YOUNG UNIVERSITY
PROVO, UTAH

point of repose - tone
unaccented tone - dom

MT
50
.W581

HARMONY AND EAR-TRAINING

BY

WILLIAM ALFRED WHITE

AUTHOR OF HARMONIC PART-WRITING
THE ESSENTIALS OF HARMONY

SILVER, BURDETT & COMPANY
BOSTON NEW YORK CHICAGO

COPYRIGHT, 1907, 1911,
BY
SILVER, BURDETT & COMPANY

ENTERED AT STATIONERS' HALL, LONDON, ENGLAND

ALL RIGHTS RESERVED

THE LIBRARY
BRIGHAM YOUNG UNIVERSITY
PROVO, UTAH

PREFACE

As the presentation of Harmony and Ear-Training in this work differs materially from that of other publications, it seems essential that a brief outline of salient features be given.

The only knowledge required or presupposed on the part of the student is acquaintance with the two staves and clefs used in piano music, with the pitch-names of musical tones, and with their positions on the piano keyboard.

No attempt is made to evolve a new "Theory of Music," nor are conventional theories accepted. Instead of these, there will be found a plain presentation of the actual facts and effects in music, based upon the universal use of musical material by composers.

The naming of chords, intervals, etc., in common use by the great majority of writers, is accepted. The importance of *individual* tones in keys and chords (here called "Points of Repose," " Quality Tones," "Characteristic Tones," and "Insistent Tones ") is fully explained.

A glance at the Table of Contents will show no chapter on Modulation. This does not mean that the subject itself is not dealt with. On the contrary, during the presentation of scales, the subject of Key-Relationship is introduced; and an exhaustive treatment of it, applicable to modern music as well as to the classics, is a distinctive feature of Chapter III and of Appendix I, Section A. In all consideration of chords, the student will find full exemplification of progressions to various keys. A knowledge of the functions of Points of Repose, Quality Tones, Characteristic Tones and Insistent Tones also involves a knowledge of certain essentials of modulation. In view of the prominence given to these features, it might indeed be said that, as in all music since the time of Bach, the principle of modulation runs through this entire work.

The reader will also seek in vain for any reference to "Altered Chords," or to the family of "Incomplete Chords" of which the Seventh-Chord on the Leading-Tone is in many treatises made a type. The author regards these things as theoretical fictions, invented to elucidate certain facts which

in this work are logically and fully explained without recourse to theoretical devices. Hence, a student using this treatise will be able to assign to their proper place the elaborate (and often laborious) treatments of these subjects to be found in other text-books.

Three-toned chords are presented before intervals for certain definite reasons, given in Chapter IV. These chords are shown as distinct entities before their relations to keys are expounded, and before chord-exercises are introduced.

In Chapter V will be found an extended treatment of intervals from many points of view, with a number of valuable and musically interesting exercises in intervallic progressions. The demonstration of the acoustical foundation of chords and intervals (in Chapters IV, V, and Appendix I, Section B) may well receive careful consideration. In Chapter VI the practical study of chords in key-relation and chord-connection is begun by the use of the common cadential progressions in three and four parts.

No "rules" or "exceptions" are given; therefore no confusing contradictions need be expected. Figured basses, obsolete in actual music for nearly two hundred years, and thoroughly deficient from a practical pedagogical standpoint, are fully explained, but are almost entirely discarded. In the place of these and of melodies for harmonization, will be found numerous exercises in three and four parts that are genuinely musical and interesting. Each of these was taken from some existing composition and developed into exercise-form.

For the development of part-writing the student may begin with the making of simple chorals and hymns in four parts, gradually extending his efforts in various forms of composition, as far as his abilities will admit. In this connection Chapter VII upon "Melody-Formation" is worthy of note.

All persons seriously studying music from any standpoint should acquire a knowledge of the fundamental facts in harmony, just as they study the grammar of a language. Ninety-nine per cent of music-students have no capacity whatever for creative work. The ability to compose is a gift which the rules and exceptions of harmony cannot supply; without this gift, and without skill in harmonizing melodies, all attempts in this direction will end in nothingness, or in what is worse — machine-made music. But for the ninety-nine per cent who have no capacity as composers, as well as

the one per cent who have, a thorough grasp of harmonic knowledge is absolutely essential; and its immediate application in analysis is the most important feature of the study.

The sections devoted to "Ear-Training" offer an original and efficient system of perceptional mental development. This system, if followed according to directions, will result in highly developed perception of tones and of harmonic and melodic progressions, as well as in a keen appreciation of tone-color. The consistent use of the three- and four-part exercises at the piano has repeatedly shown remarkable results in the perceptional development of hearing, both in the author's classes and in those of other teachers using the material in this way. An exhaustive study of such exercises *at the piano* will also be of great benefit in developing skill in improvisation — now almost a lost art.

In modern music the use of chords related to one another, but not related to any particular key, largely obtains. Hence in Chapters X, XI, XII, and XIII will be found an extended treatment of chord-progressions of this kind. Special attention is called to Chapter XI upon diminished 7th-chords, and to Chapter XIII, where the possibilities of chord-progression find detailed treatment. Here, also, the augmented 6th-chord is explained and illustrated in all its forms.

Chapter XV upon "Tone-Color" offers an extended view of the subject. In this connection no fanciful notions are entertained, nor are parallelisms with other arts admitted. Most persons have an instinctive feeling for tone-color, and musicians, particularly composers, have this sense highly developed; yet the subject is so elusive that it is a very difficult one to deal with in words. Nevertheless the author has had for several years classes in which rapid development of this sense has been accomplished.

An extensive system of cross-reference in paragraphs and exercises is a valuable feature of this book, showing the growth of basic principles. Particular attention is invited to the full and serviceable Index.

The thanks of the author are due to many persons for assistance in many ways, but particularly to Dr. A. S. Hurst, of Syracuse University, for a careful and painstaking English revision, and to Mr. V. C. Royster of Raleigh, N. C.; Prof. Albert Mack of Syracuse University; Prof. Leo Rich Lewis of Tufts College; Miss Pauline Auerbach, Miss Edith Longstreet, and Mr. Herbert Griggs of New York City.

In conclusion let it be said that this work — novel as it may appear to

many in its plan of presentation, in its exercises, in its rejection of traditional methods and matter — is not an experiment. Rather, it represents the matured results of the author's experience, and that of other teachers, in school and college, in summer normal schools, and in correspondence courses.

SYRACUSE UNIVERSITY, October, 1907.

CONTENTS

SIGNS AND ABBREVIATIONS

Scale-degrees are indicated by the numbers 1, 2, 3, 4, 5, **6**, **7**.

Pitch-names are indicated thus: A, B, C, D, E, F, G.

Exercises are abbreviated Ex.

Intervals are spelled out and capitalized, thus: Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth.

Chords are written thus: 7th-chord, 6th-chord, 9th-chord.

Constituent parts of chords are indicated as Root, Third, Fifth, Seventh, Ninth.

Major scales or keys are indicated by a bold-face capital Roman letter, thus: **A, B, C,** etc. Minor keys are indicated by italicized small letter, thus: *a*, *b*, *c*, etc.

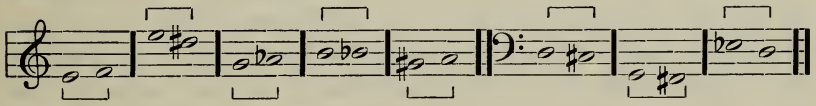
All paragraphs and exercises are numbered consecutively, and the cross-references are mainly by number.

HARMONY AND EAR-TRAINING

CHAPTER I

THE MAJOR SCALE

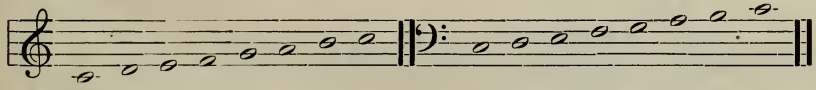
1. The shortest interval used in music is a half-step, also called a semitone. From any key in the piano-keyboard to the nearest one to the left or right, black or white, is a half-step, thus:



2. A whole-step is equal to two half-steps; thus in the whole-step from E to F♯, from E to F is a half-step, and from F to F♯ is a half-step. In the whole-step from C to D, from C to C♯ is a half-step, and from C♯ to D is another.

The student should write all the half-steps and whole-steps to be found on the keyboard within the octave, and then play them, listening carefully to the difference in their sound and effect.

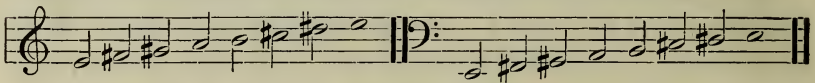
3. A major scale is a succession of eight tones arranged in regular order at distances of whole-steps and half-steps apart. The eight tones of a piano-keyboard, beginning at C, using all white keys, form a major scale, thus:



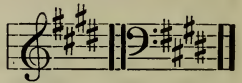
These tones form the **C** scale. Upon examining this scale it will be seen that from C to D is a whole-step; from D to E a whole-step; from E to F a half-step; from F to G a whole-step; from G to A a whole-step; from A to B a whole-step, and from B

to C a half-step. Thus a major scale is composed of whole-steps, except from 3 to 4, and 7 to 8, which are half-steps.

4. Let the student now build all the major scales, writing in as accidentals the sharps or flats necessary to make the whole-steps and half-steps fall in their proper places. Let him first write the notes of the scales without regard to whole-steps and half-steps: e. g., a scale on E would have the letter names E F G A B C D E, in which all the intervals must be whole-steps, except between 3–4 and 7–8. From 1 to 2 is a whole-step, but from E to F is only a half-step, hence F must be raised a half-step by a sharp, making from E to F♯ a whole-step; from 2 to 3 is a whole-step, but from F♯ to G is a half-step, hence G must be made G♯; from 3 to 4 is a half-step, and from G♯ to A is a half-step; from 4 to 5 is a whole-step, and from A to B is a whole-step; from 5 to 6 is a whole-step, hence C must be made C♯; from 6 to 7 is a whole-step, hence D must be made D♯; from 7 to 8 is a half-step, and D♯ to E is a half-step. The E scale then appears thus:



5. Instead of writing the sharps singly before each note, the four are for convenience grouped at the beginning of the staff, thus:

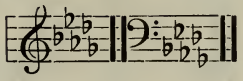


This signature means that all the f's, c's, g's, and d's, are sharped.

6. The major scale beginning on D♭ can now be found in this manner:

1 is	d♭
1–2 is a whole-step	e♭
2–3 is a whole-step	f
3–4 a half-step	g♭
4–5 a whole-step	a♭
5–6 a whole-step	b♭
6–7 a whole-step	c
7–8 a half-step	d♭

Thus the major scale beginning on d♭ is found to contain five flats, which, instead of being written singly before each note, are grouped together at the beginning This signifies that all the b's, e's, a's, d's, and g's are flatted.



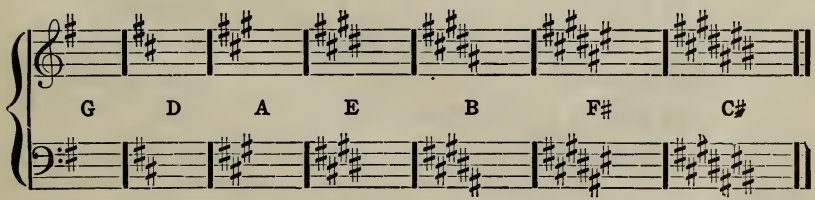
7. This grouping of the sharps or flats is called the **Signature** of the scale. The **Signature** of the **E** scale is four sharps, and the **Signature** of the **D♭** scale is five flats.

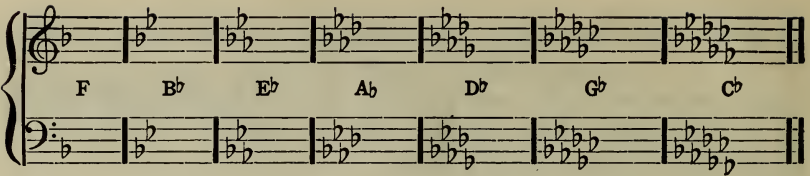
The **Signature** of scales and keys is the result of the correct formation of the scale upon the note taken as 1.

8. After the student has built a major scale upon each of the different keys to be found in the piano-keyboard, it will be seen that the **G** scale has one ♯; the **D** scale two; the **A** scale three; the **E** scale four; the **B** scale five; the **F♯** scale six, and the **C♯** scale seven. The **F** scale has one ♭; the **B♭** scale two; the **E♭** scale three; the **A♭** scale four; the **D♭** scale five; the **G♭** scale six, and the **C♭** scale seven, thus:

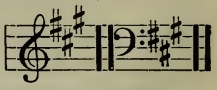
C :	**C** :
G : f♯	**F** : b♭
D : f♯, c♯	**B♭** : b♭, e♭
A : f♯, c♯, g♯	**E♭** : b♭, e♭, a♭
E : f♯, c♯, g♯, d♯	**A♭** : b♭, e♭, a♭, d♭
B : f♯, c♯, g♯, d♯, a♯	**D♭** : b♭, e♭, a♭, d♭, g♭
F♯ : f♯, c♯, g♯, d♯, a♯, e♯	**G♭** : b♭, e♭, a♭, d♭, g♭, c♭
C♯ : f♯, c♯, g♯, d♯, a♯, e♯, b♯	**C♭** : b♭, e♭, a♭, d♭, g♭, c♭, f♭

Arranging the signatures of major scales in progressive order they appear thus:





9. In writing the signatures of scales, the rule is to place the sharps or flats in the order of their entrance into the scales. Thus in the scale of **A**, we have three sharps, and as F♯ is the first sharp to appear in any scale, it is written first; C♯ being the second to appear is written next; G♯ being the next to appear is written last.



The number of sharps or flats in each scale, as well as the notes which they respectively govern must now be memorized by the student. A most excellent method of acquiring a thorough knowledge of the several scales is to recite, from memory, all scales with their signatures, until one becomes perfectly familiar with them.

10. It will be noticed that there are three pairs of scales, which, although having entirely different signatures, sound alike when illustrated upon the keyboard, because the same keys are indicated in each pair, thus:

F♯ and **G♭**. **C♯** and **D♭**. **B** and **C♭**.

These pairs of scales are called **Enharmonic Scales,** which means that different letter-names may be used, although the same sounds are represented.

11. The first tone of a scale is called . . **Tonic or Keynote.**
The second . . . . . **Supertonic.**
The third . . . . . **Mediant.**
The fourth (fifth *below* the Tonic) . **Sub-dominant.**
The fifth . . . . . **Dominant.**
The sixth (third *below* the Tonic) . . **Sub-mediant.**
The seventh . . . . . **Leading-tone.**
The eighth, a repetition of the first . **Tonic.**

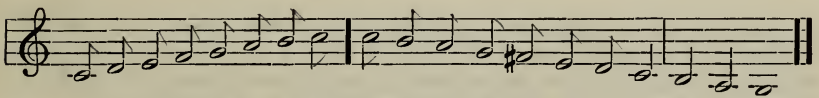
It is very important that the student familiarize himself with these names, and be able to give, in recitation, the note indicated by each of the above names.

12. The most important tones in the major scales are the Tonic, the Sub-dominant, the Dominant, and the Leading-tone, (1-4-5-7).

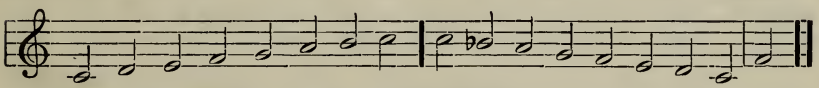
The tonic is of supreme importance because it is the root of the scale, being the foundation tone, the **point of repose.**

Of equal importance are 4 and 7, because neither of these tones can be changed without creating a new scale with a new **point of repose** — in fact, changing the character of every tone in the old scale. (This is equally true of 5, but as an altered 5 necessitates a knowledge of minor scales, its exposition is deferred until the second chapter.)

13. As an example of the above, in the scale of **C**, after playing the scale, 4, F, is made F♯,

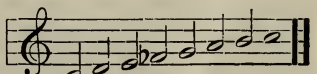


the **C** scale has been altered into the **G** scale with G as the **point of repose,** making D the dominant, F♯ the leading-tone, and C the sub-dominant. Again, if we were to play the **C** scale, and change B into B♭, retaining all the other notes, we should create the **F** scale with F as tonic, C as dominant, E as leading-tone, and B♭ as sub-dominant.



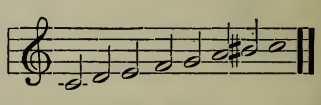
14. It should be observed that when 4 of the major scale is raised a half-step, this altered tone becomes the **leading-tone** of the new scale. If 7 of the scale were to be altered the **old leading-tone** would be destroyed. The old leading-tone will be destroyed, and a new leading-tone created by a change made in either 4 or 7 of the major scales.

15. It is readily seen that 4 can only be raised, not lowered, for if we were to

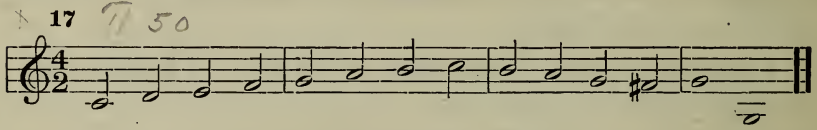


play the C scale with lowered 4 the effect upon the ear would be the same as leaving out 4 altogether or repeating 3, and C would still be the tonic and the **point of repose.**

16. It is self-evident that for a parallel reason 7 can be changed only by lowering it; for if the C scale were played with a raised 7, the effect would be the same as leaving out the 7 or repeating 1, and C would still be the tonic and the **point of repose.**

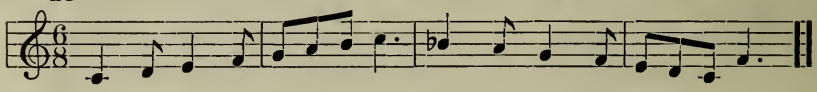


17



Ex. 17 must be continued, beginning the next time upon G, playing the little melody, note for note, in the scale of G, with the raised 4 in the third measure. Then in all the major scales in the following order: D: A: E: B: F♯, (or G♭): D♭: A♭: E♭: B♭: F, finally ending on C, in the scale of C.

18



Ex. 18 must be continued, beginning the next exercise upon F, playing the little melody, note for note, in the scale of F, with the lowered 7 in the third measure. Then in all the major scales in the following order: B♭: E♭: A♭: D♭: G♭, (or F♯): B: E: A: D: G, finally ending upon C in the key of C.

19. The process of playing these little melodies in one scale after another is termed **transposition,** which means simply that a musical idea is played at a different pitch from that in which it was originally heard.

20. The process of going from one scale or key into another by means of one (or more) altered tones is termed **modulation.** Modulation always abandons an old tonic, **point of repose,** and creates a new one. Modulations by means of the altered 4, 7 and 5 are commonly met in compositions by all composers.

The student should so familiarize himself with Exs. 17–18, that he may begin either one upon any scale tonic, carrying out the melodic idea through all the keys, ending in the scale in which he began. In all exercises he should name aloud the key in which he is playing, what the modulation is, what the transposition is, and most important of all, **feel** the new **point of repose** created by the altered tone. Persistent work of this character will give a thoroughly practical knowledge of the major scales, a good idea of the relation of keys, and moreover will be a decided step forward in real musical appreciation.

EXERCISES IN EAR-TRAINING

The training of the ear to recognize intelligently and quickly the scales, different notes in the scale, simple scale-melodies, and melodies with simple skips within the scale, is of the utmost importance to every student of music, and constitutes an essential part of the work.

21. The student should sing the major scale, up and down, and then the following short melodic passages in the order here given :

1–2–3–1 : 1–2–3–4–1 : 1–3–2–1 : 1–2–3–4–5–1 : 1–3–5–1 :
1–3–5–3 : 3–2–1 : 3–1–2 : 5–3–2 : 5–3–1 : 5–3–1–3 : 5–1–3 :
1–3–5–6 : 1–3–5–6–5 : 1–5–3–6 : 1–6–5–3–1 : 1–3–5–8 : 1–5–3–8 :
1–8–5–3 : 1–8–3–5 : 1–3–5–7–8 : 1–4–6–8 : 1–6–4–8 : 1–8–6–4 :
1–8–4–6 : 8–5–3–1 : 8–3–5–1 : 1–3–2–4–3–5–4–6–5–7–8 :
8–6–7–5–6–4–5–3–4–2–1 : 8–6–4–1 : 8–4–6–1 : 7–8–5–3 : 7–8–6–4 :
2–4–5–7–8 : 2–5–7–8 : 2–4–5–3 : 2–7–4–5–1 : 5–4–2–7–8 :
5–7–4–3–1 : 5–4–7–8–3 : 2–4–6 : 2–6–4 : 4–2–6 : 4–6–2 : 6–2–4 :
3–5–7 : 3–7–5 : 5–3–7 : 5–7–3 : 7–3–5 : 7–5–3 : 5–7–2 : 5–2–7 :
2–5–7 : 2–7–5 : 7–5–2 : 7–2–5 : 6–1–3 : 6–3–1 : 1–6–3 : 1–3–6 :
3–6–1 : 3–1–6 : 7–2–4–3–8 : 7–4–2–3–8 : 2–7–4–3–8 : 2–4–7–1–3 :
4–2–7–1–3 : 4–7–2–3–8 : 8–5–3–1 : 1–4–6–8 : 7–5–4–2–1–8 :

These numbered exercises must be used in all the major scales, for listening exercises, the student naming the tones as sung or played.

22. The tonic note of the scale is the **point of repose** of the scale; that is, it is the only note that completely satisfies the ear after a melodic figure using scale tones, — the only note in the scale that the ear will accept as a finality.

This **point of repose** with its diversifications, is the foundation upon which the whole harmonic scheme is built, and upon which the Science and Art of Music depends.

23. All the tones of the scale have a tendency to return to the tonic, directly or through the medium of another tone. But this tendency is more manifest in the dominant tone, called in this treatise the **insistent tone.**

7, the leading-tone, progresses directly into the tonic, 7–8.
2 drops directly to the tonic, 2–1.
6 progresses upwards, 6–7–8.
3 also descends, 3–2–1.
4 progresses, 4–3–1, or 4–3–2–1.

These must be constantly heard, until the listener can distinguish at once which note (including name and degree) of the scale is played.

After this has been accomplished, 4 of the scales must be raised, making a modulation to another scale with more sharps or fewer flats, as in Ex. 17, and 7 must be lowered, causing the modulation to another scale with more flats or fewer sharps, as in Ex. 18.

24. As has been explained, modulation is the shifting of the **point of repose** to a different tone, or playing musical sounds in such a manner that a new scale is created, and a new tonic becomes the **point of repose,** displacing the old one.

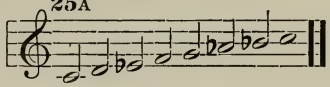
CHAPTER II

THE MINOR SCALES

The author uses the normal minor scale for three important reasons: first, it gives in an unmistakable manner the signature of all kinds of minor scales; second, there is a constantly increasing use of the normal minor scale by composers; and third, historically speaking, the normal minor scale is the true minor scale.

25. The normal minor scale is built of eight tones separated by whole-steps, except 2–3, and 5–6, which are half-steps apart. Ex. 25A is the normal minor scale on C.

25A

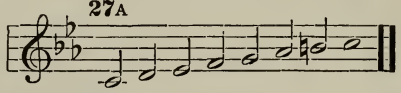


The student should now build a normal minor scale on each note to be found in the piano-keyboard, determining the signature of each, writing and reciting the scales as was done with the major scales in Chapter I.

26. The peculiarity of the normal minor scale is in the fact that it has no leading-tone.

27. The **Harmonic Minor Scale** is the same as the normal minor, except that 7 is raised a half-step to make a leading-tone. This sharping of 7 gives the harmonic minor scale a peculiar formation, as it has half-steps between 2–3, 5–6, 7–8, and a step and a half between 6–7 (27A). This raised 7 never appears in the signature, the signature of harmonic and normal minor scales with the same tonic being alike.

27A



The student should now recite[1] and play a normal and harmonic minor scale upon each note.

[1] "Recitation" and "recite," in each place where these terms are used, mean the speaking aloud of the actual names, together with sharps, flats, or other qualifying signs, of the letter-names of scales, chords, etc. This may be made purely an intellectual exercise; or the scales, chords, etc., may be indicated on the accompanying keyboard-diagram, found in the first pages, while the recitation is taking place, thus associating the names of chords, scales, etc., with their visual effect at a keyboard. Naturally, the most valuable recitation is that actually associated with the real sounds of the chords, scales, etc., at a real piano-keyboard.

28. It will be seen that the signatures of certain minor and major scales are the same, for example: G and *e*.

A chart of these scales having the same signature appears:

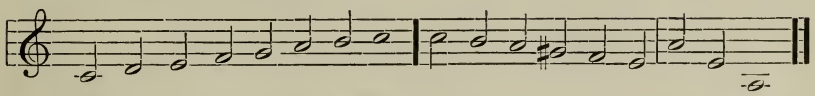
	C	no sharps, no flats	*a*
	G	one sharp	*e*
	D	two sharps	*b*
	A	three sharps	*f*♯
	E	four sharps	*c*♯
Enharmonic	B	five sharps	*g*♯
	C♭	seven flats	*a*♭
Enharmonic	F♯	six sharps	*d*♯
	G♭	six flats	*e*♭
Enharmonic	C♯	seven sharps	*a*♯
	D♭	five flats	*b*♭
	A♭	four flats	*f*
	E♭	three flats	*c*
	B♭	two flats	*g*
	F	one flat	*d*
	C	no sharps, no flats	*a*

29. These major and minor scales and keys having the same signature are called respectively, **Relative Major** and **Relative Minor** scales and keys. Thus G is the relative major to *e*, and *e* is the relative minor to G, etc. The relative major and relative minor scales are three half-steps apart; the relative minor three half-steps **below** the relative major, and inversely, the relative major three half-steps **above** the relative minor.

The student should now recite and play each minor scale and then its relative major, and vice-versa, until he is perfectly familiar with all these scales.

30. In Chapter I it was stated that 5 of the major scale was as important as 7 and 4, and now the reason is apparent, for if 5 of a major scale be raised a half-step it will create the relative minor to that major scale: if 5 in the C scale were raised from G to G♯, the other tones remaining, the *a* scale (relative minor to C), would be

created, with A as the tonic or **point of repose,** the old **point of repose,** C, being displaced, thus :



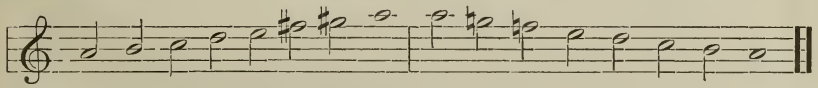
The raising of **5** in a major scale causes a modulation into the relative minor scale.

Students should now recite and play all the major scales, then raise 5 in each scale to form its relative minor.

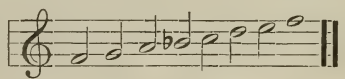
31. Major and minor scales which have the same tonic, the same **point of repose,** are called **Tonic Major** and **Tonic Minor** scales. Thus **C** and *c* are tonic major and tonic minor scales respectively. These tonic major and minor scales are also called **parallel** major and minor scales. Thus the tonic or parallel minor scale to **F** is *f,* while the relative minor scale to **F** is *d.* The parallel or tonic major scale to *a* is **A,** while the relative major scale to *a* is **C.**

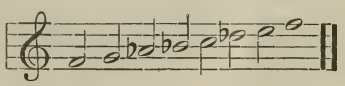
The students should now recite every major scale with its relative minor and tonic minor scales, and again, each minor scale (normal and harmonic) with its relative major and parallel major scales. This practice of reciting and **playing** all the scales, with their Tonics and Relatives, is to be persisted in until the students know all the scales and their signatures.

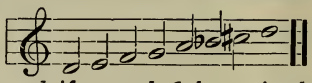
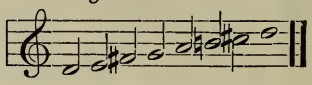
32. There is still another minor scale which is frequently used in melodic passages known as the Melodic minor scale. The melodic minor scale raises by a half-step 6 and 7 of the normal minor in the ascending scale, but returns to the regular normal minor in descending, thus ;



33. It is apparent that a harmonic minor scale may be made out of any major scale by lowering 3 and 6 a half-step. We have the major scale on F, and if the 3 and 6 be lowered by half-steps the harmonic minor scale on F will be formed, thus :

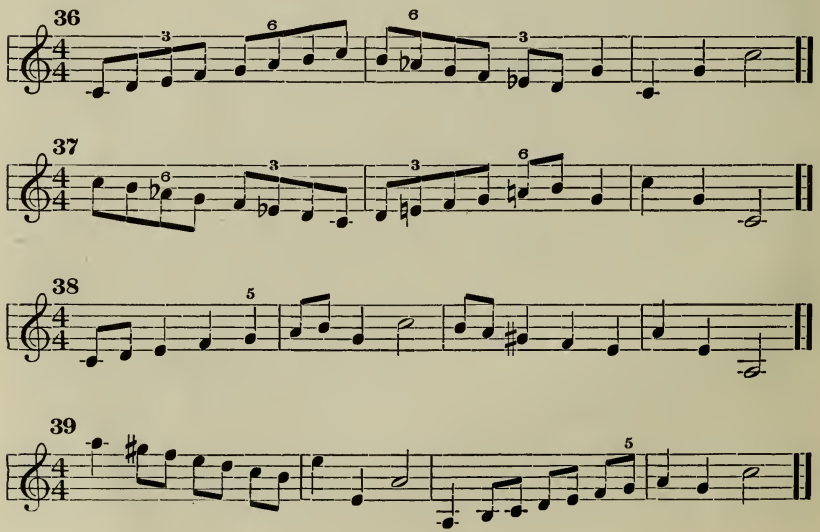




34. Again, if 3 and 6 of a harmonic minor scale be raised by half-steps we shall have the major scale upon the same tonic, thus:  This is the harmonic minor scale on D, and if 3 and 6 be raised we shall have the major scale on D, thus: 

35. The foregoing observations make 3 and 6 in the major and harmonic minor scales the **quality tones** of the scales; all other things being equal, they are the tones which make the scale major or minor. 4 and 7, as has been explained, if changed, will give a new tonic, hence are called **characteristic tones**; and if we should change 3 and 6 it would give a different quality to the scale, hence we name them **quality tones.**

The term "relative" applied to scales having the same signature, is misleading, for it gives the impression that these scales are very closely related; when as a matter of established fact the tonic major and tonic minor scales are more closely akin, for they have the tonic, the dominant, the sub-dominant, and the leading-tone in common.



40. Ex. 36 is the change from the major key into the tonic harmonic minor key. Ex. 37 is the change from the harmonic minor key into the tonic major key. Both these changes are made through the **quality tones,** 3 and 6. Ex. 38 is the change from the major key to its relative minor key, through the **raised** 5. Ex. 39 is the change from the minor key to its relative major key by means of the **restored 5.**

Exs. 36, 37, 38, 39 should be transposed and played in all keys.

EXERCISES IN EAR-TRAINING

The figured exercises in Chapter I (No. 21) are to be used with the normal and harmonic minor scales.

41. The tonic is still the **point of repose.**

The dominant is still the **insistent tone.**

In the normal minor scale the natural progression of 7 is 7–6–5–8. In the harmonic minor scale it remains 7–8. In both the normal and harmonic minor scales 2 goes direct to the tonic, 2–1 ; 3 in the order 3–2–1 ; 6 in the order 6–5–8 ; 4 in the order 4–3–1, or 4–3–2–1, or when used in the normal minor, 4–1.

Notice carefully the differences between the progressions of the different notes of the scale in major and minor.

42. It has been explained in Par. 33–35 that 3 and 6 of the major and harmonic minor scales are **quality tones,** — tones which give major or minor quality to the scale. Exs. 36–39 must now be used freely, 36 and 37 contrasting the major scale with its tonic minor or vice-versa, through the changes made in the **quality tones,** 38 and 39 showing the raised or restored 5, giving the relative major and minor. These examples clearly show the importance of 5 of the scale, the strong **insistent tone,** pushing so forcibly to the tonic or **point of repose.**

The major scales should be contrasted with the minor scales, using the figured exercises in Chapter I (No. 21) first in the major and then immediately in the tonic harmonic minor key.

43. The effect of the major scales is bright and very satisfying, while the minor scales are funereal, depressing and wailing.

A mere perusal of the foregoing chapter will be of little benefit to the student; it must be closely followed and worked out. The student is strongly recommended to read the second chapter in Sir Hubert Parry's "The Evolution of the Art of Music."

CHAPTER III

THE CIRCLE OF KEYS

44. Notice that the scale of **G** begins on the fifth note of the **C** scale; that the scale of **D** begins on the fifth note of the **G** scale; that the scale of **A** begins on the fifth note of the **D** scale, etc.

45. The scales containing flats are different; the **F** scale begins on the fourth note of the **C** scale, on the fifth **below** the old tonic; the B♭ scale begins on the fourth of the **F** scale; the E♭ scale begins on the fourth of the B♭ scale, etc.

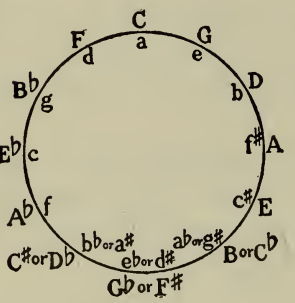
46. The same is true of minor scales; the *e* scale begins on the fifth of the *a* scale, etc.; the *b*♭ scale begins on the fourth **of** the *f* scale, the fifth **below** the old tonic.

47. Any scale with one more sharp or one flat less, always has as its tonic the dominant note of the preceding scale: e. g. the **D** scale has one more sharp in the signature than **G**, and **D** begins on D, which is the dominant of **G**; B♭ scale has one flat less than E♭, and the tonic note of B♭ is the dominant in E♭; *f*♯ has one sharp more than *b*, and the tonic of *f*♯ is the dominant in *b*; *c* has one flat less than *f*, and the tonic in *c* is the dominant in *f*.

48. A scale or key with one more flat or one sharp less begins upon and has as its tonic the sub-dominant note of the preceding scale; the B♭ scale has one flat more in the signature than the **F** scale, and the tonic in B♭ is the sub-dominant in **F**. **A** has one sharp less than **E**, and the tonic in **A** is the sub-dominant in **E**. *f* has one more flat than *c*, and the tonic in *f* is the sub-dominant in *c*; *b* has one sharp less than *f*♯, and the tonic in *b* is the sub-dominant in *f*♯.

49. The dominant, as we have seen, is the Fifth above the tonic, while the sub-dominant is the Fifth below the tonic; hence the scales and keys with one sharp more or less, and one flat more or less, are always built on the **Fifth above** or the **Fifth below** the tonic of the preceding scale. This gives (50) the Circle of Keys.

50



51. This Circle of Keys illustrates many interesting things. The keys with more sharps or fewer flats are always to the right in the circle, no matter which key be placed at the top. The keys with more flats or fewer sharps are always to the left in the circle, no matter which key be placed at the top. The enharmonic keys are shown as alternatives. The major keys are placed on the outside of the circle, while their relative minor keys are placed on the inside of the circle.

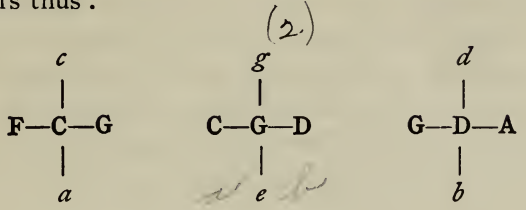
Compare the Circle of Keys with the chart at 28.

KEY-RELATIONSHIPS

52. The keys immediately to the right and to the left of any given key, within or without the circle, bear the closest relation to that key. Thus the major keys that are more closely related to **C** are **F**, to the left in the circle, and **G**, to the right. The most closely related keys to *e* are: *a*, to the left in the circle, and *b*, to the right.

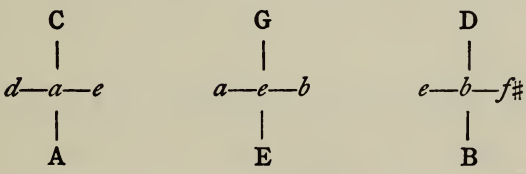
53. Each major has two closely related minor keys, its tonic minor and its relative minor. On the other hand, every minor key has two closely related major keys, its tonic major and its relative major. Thus the closely related keys to **C** are **F**, **G**, *c*, and *a*. The closely related keys to *c* are *f*, *g*, **C**, and **E♭**.

54. A chart of the keys with those most nearly related to them appears thus :



In the centre of each group is the main key ; immediately to the left, the sub-dominant ; to the right, the dominant key ; above the main key is seen its tonic minor key, and below its relative minor key.

55.

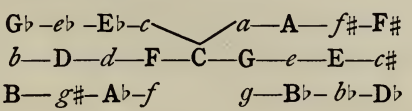


In the centre of each group is the main (minor) key. To the left is the sub-dominant ; to the right, the dominant ; above it is the relative major, and below, the tonic major key.

(The completion of this diagram will be found in Appendix I, section A).

The student should now recite and play all these scales in accordance with the above scheme, until they become familiar.

56. A relationship, close or remote, exists between all the scales in the Circle of Keys. As an illustration of this, a table of keys related to **C** will be given and explained.



This chart shows **all** the major and minor keys as related to **C.**

57. It has been explained wherein **F, G,** *c, a* are related to **C.** The reasons for the other relations in the above chart are as follows: **C** is related to **A** through *a* and the tonic in **A** is a **quality tone** in **C,** while the dominant in **A** is the other **quality tone** in **C. C** is related to *f*♯ through **A,** and the first **quality tone** in *f*♯ is the second **quality tone** in **C;** the sub-dominant in *f*♯ is the leading-tone in **C,** the *7* in *f*♯ is, enharmonically, the sub-dominant in **C.**

58. C is related to **F**♯ through *f*♯, and also through the fact that the **characteristic tones** in **C** (F and B) are enharmonically the **characteristic tones,** (E♯ and B) in **F**♯. **C** is related to **E**♭ through *c,* and through the fact that the first **quality tone** in **E**♭ is the dominant in **C,** and the second **quality tone** in **E**♭ the tonic in **C.** [1]

TECHNICAL TERMS USED IN CHAPTERS I TO III, INCLUSIVE

Interval.	Semitone.	Half-step.
Major.	Scale.	Whole-step.
Sharp.	Flat.	Accidental.
Signature.	Keys.	Staff.
Tonic.	Supertonic.	Enharmonic.
Sub-dominant.	Dominant.	Mediant.
Leading-tone.	**Point of Repose.**	Sub-mediant.
Transposition.	Pitch.	**Insistent Tone.**
Harmonic Minor.	Normal Minor.	Modulation.
Relative.	Parallel.	Melodic Minor.
Characteristic Tones.	Tonic Major.	**Quality Tones.**
Relative Major.	Relative Minor.	Tonic Minor.
	Circle of Keys.	

[1] Continued in Appendix I, Section **A.**

EXERCISES IN EAR-TRAINING

59. Begin with some major scale, as **C**, singing up and down the scale, then proceed to the relative harmonic minor scale[1] (see foot-note). Return to **C** scale, singing up and down, but pausing on 5 in the descent. Then sing the major scale on that note (G). Now return to **C**, singing down and up the scale, pausing on 4 in the ascent. Then sing the major scale upon that note (F). Again return to **C**, singing down and up, ending on the tonic: then sing the tonic minor scale upon C, down and up, pausing on 3 in the ascent (E♭); then sing the major scale on E♭, up and down, and return to **C**, singing up and down, ending on the tonic.

60. Next sing the A♭ scale up and down, pausing on 3 in the descent; then sing the major scale upon that note (C), up and down, pausing on 3 in the descent; then sing the major scale on that note (E), ascending and descending, pausing on 4 in the descent. In like manner sing the minor scale on that note (A), down and up, pausing on 3 in the ascent, and finally sing the major scale on that note (C), ascending and descending, pausing on the tonic C.

61. Begin again, singing the **C** scale, ascending and descending, as far as 6 (A), then the major scale upon that note A, descending and ascending, as far as tonic A. Sing the tonic minor scale upon A, up and down, as far as 4 (D); then sing the major scale on that note (D), up and down, pausing on 4 (G), in the descent; next the major scale on that note (G), up and down, pausing on 4 in the descent (C), then the major scale on C, up and down, ending on the tonic.

62. Sing the major scale again on C, up and down, pausing on 6 (A), in the descent; then the major scale on A down and up to 6 (F♯); then the major scale on that note (F♯), up and

[1] In the ear-training work, the author would strongly discourage the use of the tonic-sol-fa syllables in singing, as they give a wrong impression of the minor scale. They destroy the real character of the minor scales, as they make them at all times "dependencies" of a major scale. Such presentation may be permissible in elementary schools.

down as far as 5 (C♯); then the major scale on that note (C♯), up and down, pausing on 3 in the descent (E♯); then the major scale on that note (F), up and down as far as 5 (C); and finally the major scale on that note (C), down and up, pausing on the tonic C.

63. Again, sing the major scale on C, ascending and descending, pausing on 3 in the descent; then the major scale on that note (E), up and down, pausing on 6 in the descent (C♯); then the minor scale on that note (C♯), down and up, pausing on 5 (G♯), in the ascent; then the minor scale on G♯, up and down, pausing on 6 (E) in the descent; then the minor scale on that note (E), down and up, pausing on 5 (B) in the ascent; then the minor scale on B, down and up; then the major scale on B, down and up, pausing on 3 (D♯) in the ascent; then the minor scale on D♯, down and up, pausing on 6 (B) in the ascent; then the minor scale on that note (B), down and up, pausing on 6 (G), in the ascent; then the major scale on G, ascending and descending, pausing on 4 in the descent; and finally, the major scale on that note (C), ascending and descending, ending on the tonic.

64. Again, sing a major scale on C, up and down, pausing on 4 in the descent (F); a minor scale on that note (F), up and down, pausing on 4 in the descent; then a minor scale on that note (B♭), down and up; then a tonic major scale on that note (B♭), down and up, pausing on 6 in the ascent; then a minor scale on that note (G), then a major scale on the same note pausing on 4 (C), and lastly, a major scale on C, ending on the tonic.

All major and minor scales and keys are used in the foregoing exercises, and each exercise is a digression from the scale of C and a return to it. At every change the students should give the name of the new scale, reciting the names of the notes in the new scale. Frequently the students should be called upon to sing various tones in the scale being used at the moment. This work, besides being most excellent training for the ear, when used in recitation work, develops concentration, consecutive thinking power, and logical reasoning.

CHAPTER IV

THREE-TONED CHORDS

Three-toned chords are treated before intervals for several potent reasons: first, there are but four kinds of three-toned chord, (major, minor, diminished, and augmented), against nineteen differently named intervals; second, there are only two kinds of consonant chords (major and minor), and either one of these contains within itself all the consonant intervals used in music; third, it is impossible to explain consonant intervals with or without **points of repose** unless they are first heard as parts of consonant chords; fourth, many years of practical work has proven that when these subjects are introduced in this order, the students acquire a thorough knowledge of both chords and intervals in much less time than is required in the usual way; fifth, it is more natural, inasmuch as all musical students have the inclination to use chords, seldom thinking of intervals; and finally, the inversion of three-toned chords never changes the name of the chord, whereas the inversion of any interval completely changes the naming of the inverted interval.

65. Any note with the Third and Fifth above it is a **triad.** Thus a triad on G is G, with the Third above G, B, and the Fifth above G, D: i.e., G–B–D.

A triad on D would be D–F–A.
A triad on C would be C–E–G.
A triad on B would be B–D–F.

66. It is evident that triads can be **spelled** only in seven different ways, thus:

C–E–G.
D–F–A.
E–G–B.
F–A–C.
G–B–D.
A–C–E.
B–D–F.

67. It makes no difference whether C be natural, sharped or flatted, the names of the other notes in a triad on C will always be E (natural, sharp, or flat), and G (natural, sharp, or flat).

Thus a triad on D might be D –F –A. On D♭, D♭–F –A.
D –F♯–A. D♭–F –A♭.
D –F♯–A♯. D♭–F♭–A♭.
D –F –A♭. D♭–F♭–A♭♭.

The above shows eight different triads with the same letter names used in the "spelling," a natural, sharped, or flatted D, F, A.

The student must fix in his memory the spelling of triads in the seven ways, so that he can give the spelling of any one at any time. If E-A♭–B were played on the piano, the combination of tones would sound like a triad; still it would not be one because that particular triad must be spelled E–G♯–B. This correct spelling of triads, in fact all chords, is of great importance, as much in fact, as correct spelling in English: bow, meaning the forward part of a boat, and bough, the limb of a tree, are sounded alike, but the difference in meaning is shown by the spelling and the context.

68. The lowest note of the triad is the **Root.**
The middle note of the triad is the **Third.**
The highest note of the triad is the **Fifth.**

69. There are four kinds of triads, termed **major, minor, augmented,** and **diminished.**

70. The measurements of all major triads are the same, i.e., from the Root to the Third equals four half-steps; from the Third to the Fifth equals three half-steps. Thus a major triad on G is G–B–D; on D, D–F♯–A; on B♭, B♭–D–F; on E♭, E♭–G–B♭; on D♭, D♭–F–A♭.

The student should now write and play at the piano, a major triad on C, C♯, D, D♯, E♭, E, F♭, F, F♯, G♭, G, G♯, A♭, A, B♭, B, C♭, and D♭. Several of these chords are enharmonic. Great care should be exercised in the spelling, as well as in the distances. A double sharp (written ×) will be required before some of the notes in some of these triads. A double sharp places a note two half-steps higher in pitch than the natural note, thus: F, F♯, F×, the last note, sounding the same as G, is called "F double sharp." The student should recite these major chords, and be able to give, upon call, the Third or Fifth of any one; or, when the Third is given, recite the Root and Fifth; or, with the Fifth given, recite the Root and Third.

71. The measurements of **all** minor triads are the same, i. e., from the Root to the Third, three half-steps; from the Third to the Fifth, four half-steps.

Thus a minor triad on F would be F–A♭–C; on G, G–B♭–D; on E, E–G–B; on B♭, B♭–D♭–F; on B, B–D–F♯.

Minor triads should now be written, and played at the piano, upon C, C♯, D♭, D, D♯, E♭, E, E♯, F, F♯, G♭, G, G♯, A♭, A, A♯, B♭, B, C♭. Here again the spelling should be correct. A double flat, written 𝄫, will be required for some of these chords. Several of these triads are again enharmonic. The minor triads are to be recited in the same manner as the major.

72. The measurements of **all** diminished triads are the same, i.e., from the Root to the Third, three half-steps; from the Third to the Fifth, three half-steps. Thus a diminished triad upon A is A–C–E♭; on B, B–D–F; on G, G–B♭–D♭; on C, C–E♭–G♭; on E, E–G–B♭.

Diminished triads should now be written, and played at the piano, upon C, C♯, D♭, D, D♯, E♭, E, E♯, F, F♯, G♭, G, G♯, A♭, A, A♯, B♭, B, B♯, C♭. Carefully notice spelling. Several of these triads are enharmonic. These diminished triads should be recited in the same manner as the major and minor ones.

73. The measurements of **all** augmented triads are the same, i. e., from the Root to the Third, four half-steps; from the Third to the Fifth, four half-steps. Thus an augmented triad on G is G–B–D♯; on C, C–E–G♯, etc.

Augmented triads are now to be written, and played at the piano, upon C, C♯, D♭, D, E♭, E, F, F♯, G♭, G, A♭, A, B♭, B, C♭.

The student should now recite a major triad, a minor triad, a diminished triad, and an augmented triad upon each note, thus C–E–G, C–E♭–G, C–E♭–G♭, C–E–G♯; C♯–E♯–G♯, C♯–E–G♯, C♯–E–G, C♯–E♯–G×; and this practical work should be persisted in until he is familiar with all these chords.

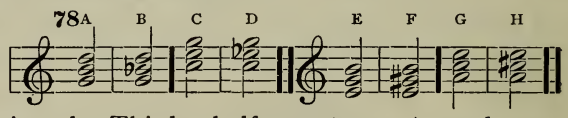
74. These chords exist entirely independent of any key or key-relation, and must be thoroughly learned before being used in their key-relations. Three-toned chords may be used in connection one with another in pleasant and musical progressions without establishing any definite key.

75. The major and minor triads (or common chords) are the only chords that are concordant, sounding agreeable to the ear. All other combinations of three or more tones that are not major or minor common chords, are **always** discords, sounding disagreeable, unpleasant, or unfinished.

76. Major chords as entities are bright, joyous and satisfying. The minor chords as entities are, on the contrary, mournful, wailing, and depressing.

77. Discords may be harsh, mild, slightly unpleasant or very discordant. The augmented chord is very harsh and dissonant, while the diminished chord is only mildly so. (See 101.)

78. The major triad (A or C) may be altered into a



minor triad by lowering the Third a half-step (B or D); and, conversely, the minor chord (E or G) may be altered into a major chord by raising the Third a half-step (F or H).

79. This makes the Third of the major and minor chords what we term the **quality tone** of the consonant chords — the tone which makes these chords bright and cheerful, or dull and mournful.

80. The Root of the major or minor chord is the **point of repose** for that chord. The Fifth of the major or minor chord is the **insistent tone** for that chord—the tone which insists upon returning to the **point of repose.**

81. Every major or minor chord has a "point of repose," an "insistent tone," and a "quality tone," without regard to the tonic of a scale, or relation to a key.

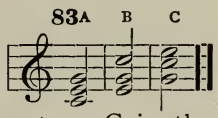
Any combination of tones that is dissonant has **none** of these salient features.

82. Every dissonant chord requires a **resolution,** that is, the discord must proceed to a concord, i. e., a major or a minor

chord; or, differently expressed, every combination of musical sounds which has **no point of repose** must eventually proceed to another combination of musical sounds which **does** have a **point of repose.** (See Chapter X.)

INVERSION OF THREE-TONED CHORDS

Close and Open Harmony



83. Any three-toned chord may be written in several forms (83, A, B, C). Each of these three chords is the C-major chord, that is, the tone C is the **root** of all three.

The first chord, C–E–G, is the **fundamental** form of the C major chord.

The second chord, E–G–C, while it remains the C major chord, has the Third of the chord for its lowest tone, and the other two notes, Fifth and Root, are above the Third.

The third chord G–C–E, while it remains the C major chord, has the Fifth for its lowest note, and the other notes, Root and Third, are placed above the Fifth.

84. Whenever the Third of any chord is the lowest note, the chord is in the **first inversion.** Whenever the Fifth of any chord is the lowest note, the chord is in the **second inversion.**

85. No chord is inverted when the Root is the lowest note, no matter what may be the position or arrangement of the upper tones.

86. First inversion means that the Third of a chord is the lowest note in that particular chord-form. **Second inversion** means that the Fifth of a chord is the lowest note in that particular chord-form.

87. The Root of **any** chord is the lowest note of that chord **when the notes are arranged in thirds, one above the other.** If a chord is not arranged in thirds, find the note from which it can be

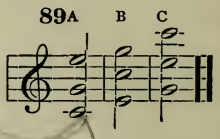
arranged in thirds, and that note **is the Root.** If it cannot be arranged in thirds from any of its notes, it is not a simple chord-formation.

The student should now write, play and recite each major, minor, augmented and diminished chord in its three forms, i. e., fundamental form, first inversion form, and second inversion form; as

C–E–G, E–G –C, G –C–E. C–E♭–G, E♭–G –C, G –C–E♭.
C–E–G♯, E–G♯–C, G♯–C–E. C–E♭–G♭, E♭–G♭–C, G♭–C–E♭, etc.

88. These three forms of chords are termed **close harmony,** that is, the notes in each chord-form are grouped as closely as possible.

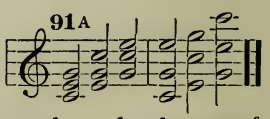
89. Each one of these chords (83 A, B, C) has another simple form (89 A, B, C). These three chord-forms are also C major chords, because C is the Root of all. In the first, C–G–E, a note (E) is left out between C—G, and a note (C) left out between G—E.



In the second chord E–C–G, a note is wanting between E–C, and also one between C–G. In the third chord, G–E–C, a note is wanting between G–E, and one between E–C.

90. These three chords are in **open harmony** because the space between these notes is open. **Open** or **close** harmony does not affect the inversions of chords in any way.

91. Thus we have six plain forms of all three-toned chords, three in open and three in close harmony. Two of these chords, C–E–G and C–G–E, have the Root in the lowest part, and are fundamental forms of the C major chord, — one in close harmony and one in open harmony. Two of them, E–G–C and E–C–G, have the Third in the lowest part, hence are first inversions of the C major chord, — one in close harmony and one in open harmony. Again, two of these chords, G–C–E and G–E–C, have the Fifth in the lowest part, hence are second inversions of the C major chord, one in close harmony, and one in open harmony.

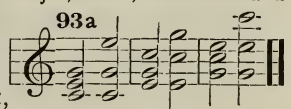


92. The Root of the chord is always the Root, no matter whether it be the lowest note in the arrangement of the chord-tones, the middle note, or the upper note. The Third is always the Third, irrespective of position. The Fifth is always the Fifth, wherever it is placed.

93. The Root of a major or of a minor chord is the **point of repose** for that chord, independent of its position. The Fifth of a major or of a minor chord is the **insistent tone** for that chord, independent of its position. The Third of a major or of a minor chord is the **quality tone** for that chord, independent of its position.

The student should now recite, play and write every major, minor, diminished and augmented chord in its three close and three open forms, in this manner: fundamental form, close harmony, open harmony; first inversion form, close harmony, open harmony; second inversion form, close harmony, open harmony; as C–E–G, C–G–E; E–G–C, E–C–G; G–C–E, G–E–C, — as in 93a. When these chords are illustrated at the piano the close forms are to be played with the left hand, while, in the open forms the left hand takes the two lower notes and the right hand the upper note. The student should be able to recite readily any chord in any form explained in this chapter. The playing of the chords at the piano is of supreme importance.[1]

93a

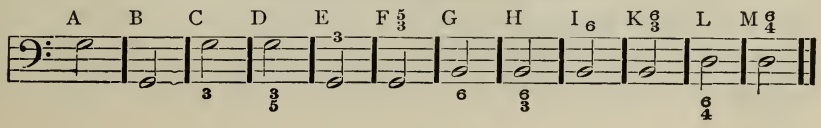


[1] "Figured Basses." It was formerly the custom to write merely the bass notes or lowest notes of nearly all chords, indicating by figures what notes were to accompany them. For a fundamental chord (say on G) the composer wrote merely the G (see A, B below), signifying that a G–B–D chord (sharps or flats entirely governed by the key) was to be played. Occasionally G was written with a figure 3 or 5, sometimes both, over or under it (see C, D, E, F). This meant that a G–B–D-chord of some kind was to be played. If the composer wished to indicate the first inversion of a chord, he wrote the bass note, and with the figure 6, or 3 and 6, indicated the tones that were to accompany it; as an example, if the first inversion of a G-chord were wanted, the Third of the chord would be written with the figures over or under it (see G, H, I, K). If the second inversion of a chord was desired by the composer, he wrote the Fifth of the chord, with the figures 6 and 4 under or over this note: for example, if the G-chord in its second inversion was desired it was written, as at L or M.

These sets of figuring were used because the other notes in the chords (when the chords were reduced to their simple three-note forms) are at those distances above the bass note. The arrangement of the other notes of the chords was governed entirely by the context, by the chord that preceded or followed. The quality of major, minor, augmented or diminished, had nothing to do with the figuring. This method of "figured basses" has been obsolete with composers for more than a century. It may still be seen in numerous text-books on Harmony; but many writers of such books have entirely discarded it, notably Goodrich and Clarke.

It is still a common practice for musicians to speak of the "three-five-chord," meaning the fundamental form of a three-toned chord; the "six-chord" or the "three-six-chord" or the "chord of the sixth" all meaning the first inversion of a three-toned chord; and the "six-four-chord" meaning the second inversion of a three-toned chord. For the full treatment of three-toned chords see Chapters VI and X.

Specimens of Figured Bass Markings



EXERCISES IN EAR-TRAINING

94. The major chord, to the ear, sounds perfectly natural, as it actually exists in nature. The major chord, considered alone, is bright and satisfying in effect. The minor chord, considered alone, is funereal and mournful. The diminished chord is somewhat disagreeable, in that it is mildly discordant and needs resolution into a concord. The augmented chord is a harsh discord and demands resolution into a concord.

95. The major and minor chords have a **point of repose,** — a tone which the ear selects to be heard last; this tone is the Root of the chord, no matter where it is placed (see 81). The diminished and augmented chords have **no point of repose.**

The four kinds of chords are to be contrasted in all their six forms.

96. The inversion of chords, whether in close or open harmony, does not effect the quality, which is retained regardless of their form.

The Fifth of a major or of a minor chord is the **insistent tone** for that chord, that is, it insists upon the **point of repose** — the Root — as a finality. But for this "insistence," the ear would not so unerringly seek the point of repose.

The Third of a major or of a minor chord is the **quality tone** of the chord, that is, it is the tone which gives the major or minor quality.

The character of the individual tones of the chords is the all-powerful factor in determining chordal progressions.

97. A three-note chord is to be played. The student should decide whether the chord is a concord or a discord. If it is a discord it cannot be major or minor, because they are concords. As it is neither of these, it must be a diminished or an augmented chord. If it is harsh, it cannot be a diminished chord (because the diminished chord is mildly dissonant), hence it can be only an augmented chord. Now let a consonant chord be played. It

cannot be an augmented or a diminished chord, because they are dissonant. If the chord is not a sad and wailing one, it must be bright and cheerful — a major chord.

98. The student is to sing each note until he determines the **point of repose,** or Root; again until the **insistent tone,** the Fifth, is found; and until the **quality tone,** the Third, is determined. The teacher must see to it that these exercises are continued until the student can readily determine by hearing alone, whether the chord illustrated be a major, a minor, a diminished or an augmented chord, and can sing readily the **point of repose,** the **insistent tone,** or the **quality tone** of major and minor chords.

99. The student should then be trained to determine, by the sense of hearing, whether the chord in question be in its fundamental form, first inversion, or second inversion.

If he find that the **point of repose** is the lowest tone, the chord **must** be in the fundamental form;

if he find that the **quality tone** is the lowest tone, the chord **must** be in its first inversion form;

but if he find that the **insistent tone** is the lowest tone, the chord **must** be in its second inversion.

Going further, he must determine in the same manner, which tone is highest, and finally which tone is the middle one.

For an example, C♯–A–E, is played at the piano, with the student in a position where he cannot see the keys. He is then to determine which note is lowest. If it be the **quality tone,** it proves that the chord is in the first inversion. Now let him find the **point of repose;** then the **insistent tone.** The total result is, a major chord in its first inversion, with the Root as the middle tone and the Fifth at the top. Therefore the chord is in open harmony.

Next, the student should be given the actual name of some one note in the chord, and then directed to reason out the names of the other notes after this scheme: The upper tone is E; it is the Fifth, and the chord must therefore be the A major chord, because E is the Fifth of that chord (A major). The lowest tone is the **quality tone,** and the **quality tone** of the A major chord is C♯. The middle tone is the **point of repose,** and the **point of repose** of the A major chord is A; hence the chord tones in the arrangement being played are C♯–A–E, which is the first inversion of the A major chord, in **open harmony.**

100. Chords are always read from the lowest note upwards.

Constant practice of this kind must be continued until the technique of this method becomes automatic, and the forms, notes, and inversions of chords determined with no apparent effort.

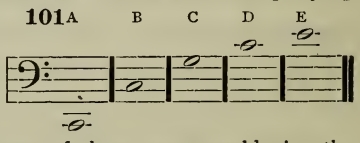
Such practice will develop the hearing capacity, and enable the mind to act rapidly, thus enhancing the musical appreciation of every student, and is a great stride toward that desideratum — **absolute pitch.**

Absolute pitch, in its entirety, includes the ability to determine by the unaided hearing, the kind of chord that is played, the actual names of the notes in that chord, the ability to intelligently follow all melodic and chordal progressions in music; in fact to "see" with the ear as plainly as if the notes were on a printed page before the eyes. This capacity exists in most persons of ordinary musical ability, but needs consistent development. It is impossible to determine by hearing alone which tone in the augmented chord is the Root, Third, or Fifth. It is very difficult at this stage of the student's progress, to determine by the hearing alone, which tone is the Root, the Third, or the Fifth, in the diminished chord.

DEMONSTRATION

101. The science of acoustics has proven that when a musical tone is heard, it is not a simple tone, but is composite in its nature.

The other elements of this composite tone are the same as those which would be produced from aliquot parts of the same string, column of air, or other generator of the basal tone. Thus, if the C string of a piano, which gives the sound of C (101 A) were to be struck, its sound has accompanying it several others which correspond exactly to the same sounds made from aliquot parts of that string. If the string were divided in halves, the sound from either half would be the octave above the original tone (101 B); if into three equal parts, any one of these parts would give the sound of G (101 C), an octave and a fifth above the original tone; if into four equal parts, each fourth would give the sound of C (101 D), two octaves above the original tone; if into five equal parts, each of the five parts would give the sound E (101 E), two octaves and a third above the original tone.



102. It should be noticed that the tones derived from the aliquot parts of the string give the notes of a major chord.

With the aid of a violin or cello some curious and valuable facts may be developed. If the point on a string which exactly marks the centre is merely touched, not pressed down, and the bow drawn across either half, both

halves of the string will sound the octave above the open string. If a point on the string exactly marking a third of the string is touched, not pressed, and the bow drawn across the short end of the string, the remaining long part of that string will divide itself into two equal parts, making the entire string vibrate in three equal parts, and the tone given forth will be the Fifth of a major chord. The full length or half length of the string will give the Root of the same chord.

If a point exactly marking a fourth of the string is touched, and the bow drawn across the short end of the string, the long end will divide itself into three equal parts, causing the whole string to vibrate in four equal parts, and the tone produced will be the Root of the major chord, two octaves higher than that produced by the full length of the string.

Again, if the point marking an exact fifth of the string is touched and the bow drawn across the short end of the string, the longer part of the string will divide itself into four equal parts, causing the whole string to vibrate in fifths, and the tone produced will be the Third of a major chord of which the other derived tones were the Root and Fifth.

Following the same law, a point marking the exact sixth of the string being touched, and the bow drawn across the short end, the remaining long part will divide itself into five equal parts, causing the whole string to vibrate in sixths, and the sound produced will be the Fifth of the major chord.

But if the string be divided into seven equal parts, it will produce a sound which will not accord or harmonize with the other tones and we shall have a discord.

103. The sounds derived from the aliquot parts of a string are termed **overtones,** or **natural harmonics.** Thus the major chord is Nature's Concord, and the proportion of tones in it is : three Roots, two Fifths, and one Third.

The Third and Fifth of the major chord are generated by the Root, and point very strongly to that Root, the generator, as the point of repose. The Fifth of the minor chord is generated by the Root, but the Third is not so generated. The tones of the diminished and augmented chords have no common generator, hence they have no point of repose.

See Chapter V for fuller details along this line of acoustics and tone effects. In "Sound and Music" by Zahm (McClurg & Co.) will be found a very able explanation of the physical properties of sound.

CHAPTER V

INTERVALS

104. An interval is the distance from one note to another. An interval is the effect of two tones heard simultaneously or in sequence.

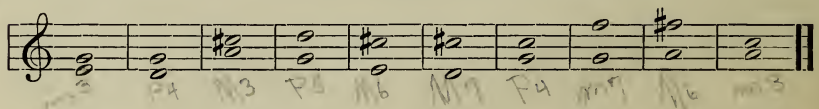
105. The name of an interval (whether it be a Third, Fourth, Fifth, etc.) is determined entirely by the letter-names of the two notes at the ends of the interval. Thus a Third from E is G; a Seventh from G is F; a Fifth from A is E; a Third from A is C, etc.

106. In Chapter IV are found four kinds of triads, major, minor, diminished, and augmented. In intervals we find five kinds, major, minor, augmented, diminished, and perfect.

107. Fourths, Fifths, and Octaves are never termed major or minor, but perfect, augmented, or diminished. Seconds, Thirds, Sixths, and Sevenths are never perfect, but major, minor, augmented, or diminished.

108. The major scale is the standard of measurement for all intervals.

109. Intervals above the tonic of a major scale are always major or perfect; that is, if the two notes in an interval belong to a major scale built on the lower of the two notes, the interval must be major or perfect. Suppose these intervals be measured:

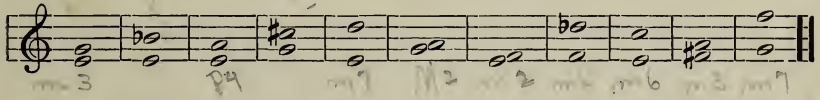


E–G is a Third, but it cannot be a major Third, as both tones cannot be found in the major scale built on E; D–G is a Fourth,

and is perfect, because both tones belong to the major scale built on the lower note; A–C♯ is a major Third, because both tones belong to the major scale built on the lower note; G–D is a perfect Fifth, because it belongs to the major scale on G, the lower tone; E–C♯ is a major Sixth because both tones are parts of the major scale on E, the lower tone; D–C♯ is a major Seventh, because both tones belong to the major scale on the lower note, D. G–C is a perfect Fourth, because both tones belong to the major scale on G, the lower tone; G–F does not belong to the major scale on G, the lower note, hence the interval cannot be a major interval; A–F♯ is a major Sixth, as both tones belong to the major scale on A, the lower note; A–C is not a major Third, because both tones do not belong to the major scale built on the lower note.

110. If both tones of an interval do not belong to the major scale of which the lower tone is the tonic, the interval is neither major nor perfect.

111. The intervals below the tonic of a major scale are always minor or perfect: that is, if the two tones in an interval belong to a major scale built on the upper of the two tones, the interval must be minor or perfect. Suppose these intervals be measured:



E–G cannot belong to the **E** scale, hence the interval cannot be a major Third, but it does belong to the major scale built on the upper note G; and as the E is below the tonic G, the interval is a minor Third. E–B♭ does not belong to the **E** scale nor to the **B♭** scale, hence the interval is not a perfect Fifth; E–A can be measured by the **E** scale or by the **A** scale, that is, both tones may belong to the **E** or the **A** scale, hence the Fourth is perfect; G–C♯ cannot belong to the **G** scale nor to the **C♯** scale, hence the interval is not a perfect Fourth; E–D is a Seventh, but cannot be major as both tones do not belong to the **E** scale; but they do belong to the

scale in which the upper tone is the tonic, and as E is below that tonic, the interval is a minor Seventh; G–A cannot be measured by the scale in which A is the tonic, therefore the interval cannot be a minor interval; as it can be measured by the G scale (the scale on the lower note) it must be a major second; E–F cannot be measured by the E scale but can be by the F scale, hence the interval is a minor second; F–D♭ is not part of the F scale, therefore the interval is not a major Sixth: it does belong to the D♭ scale, hence the interval is a minor Sixth; E–C cannot be measured by the E scale, but can be by the C scale, therefore it is a minor Sixth; F♯–A is a minor Third, as it can be measured only by the scale on the upper note; G–F is a minor Seventh because it can be measured only by the scale on the upper note.

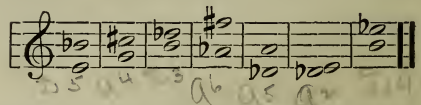
112. It should be noticed that the perfect Fourth and the perfect Fifth can be measured by the scale built on the lower or the upper note. This is one reason why these intervals are termed perfect.

113. Major intervals can be measured only by the major scale on the lower note. Minor intervals can be measured only by the major scale on the upper note.

114. Augmented intervals are always a half-step larger than major or perfect intervals.

115. Diminished intervals are always a half-step smaller than minor or perfect intervals.

116. E–B♭ cannot be measured by the E scale nor by the B♭ scale, hence it is not a perfect Fifth; but it is a half-step smaller than the perfect Fifth E–B, therefore it is a diminished Fifth; G–C♯ cannot be measured by the G nor the C♯ scale, hence it is not a perfect Fourth; but as it is a half-step larger than the perfect Fourth G–C, it is an augmented Fourth; B–D♭ is a half-step smaller than the minor Third



B–D, hence it is a diminished Third; A♭–F♯ is a half-step larger than the major Sixth A♭–F, therefore it is an augmented Sixth; D♭–A is a half-step larger than the perfect Fifth D♭–A♭, hence it is an augmented Fifth; D♭–E is a half-step larger than the major Second D♭–E♭, therefore it is an augmented Second; B–E♭ is a half-step smaller than the perfect Fourth B–E, hence it is a diminished Fourth.

117. The intervals in common use are:

Perfect, augmented, and diminished Primes.[1]
Major, minor, and augmented Seconds.
Major, minor, and diminished Thirds.
Perfect, augmented, and diminished Fourths.
Perfect, augmented, and diminished Fifths.
Major, minor, and augmented Sixths.
Major, minor, and diminished Sevenths.
Perfect, augmented, and diminished Octaves or Eighths.

INVERSION OF INTERVALS

118. The inversion of chords does not change the names of the chords, for example, the C major chord remains the C major chord no matter how inverted.

119. With intervals this does not apply, as the inversion of an interval completely changes it into another interval. The "quality" of an interval is not changed by inversion. If dissonant it will remain dissonant; if consonant it will remain consonant after inversion. (See Ear-Training Section, Par. 132.)

120. Inversion of an interval means simply that the note which was lowest before, becomes the highest note after inversion, thus:

[1] In the case of the Primes, there is an apparent contradiction of terms: C–C♭ is named a Diminished Prime; C–C♯ is named an Augmented Prime. To the ear, both are a half-step larger than a Prime.

121. There are five laws of inversions of intervals and these laws never change:

All major intervals, when inverted, become minor intervals.
All minor intervals, when inverted, become major intervals.
All diminished intervals, when inverted, become augmented intervals.
All augmented intervals, when inverted, become diminished intervals.
All perfect intervals, when inverted, remain perfect intervals.

These laws are to be memorized.

Thus E♭–G is a major Third, but when inverted, G–E♭, it becomes a minor Sixth; C–E♭ is a minor Third, but when inverted, E♭–C, it becomes a major Sixth; C–G♭ is a diminished Fifth, but when inverted, G♭–C it becomes an augmented Fourth; A♭–F♯ is an augmented Sixth, but when inverted, F♯–A♭, it becomes a diminished Third; A–D is a perfect Fourth, and when inverted, D–A, it remains a perfect Fifth.

122. It should be noticed that the numeral of any interval plus the numeral of its inversion equals 9.

A Second when inverted, becomes a Seventh.
A Third when inverted, becomes a Sixth.
A Fourth when inverted, becomes a Fifth.
A Fifth when inverted, becomes a Fourth.
A Sixth when inverted, becomes a Third.
A Seventh when inverted, becomes a Second.
An Eighth when inverted, becomes a Prime.

Thus an augmented Fourth, when inverted, must become a diminished Fifth; for augmented intervals, when inverted, become diminished, and 9 minus the Fourth equals the Fifth. A minor Third inverted must become a major Sixth, because minor intervals, when inverted, become major, and 9 minus the Third equals the Sixth; etc.

T10-91-72-73
682 P174

Here the student should analyze the intervals contained in the six forms of the major, minor, diminished, and augmented chords, which were explained in Chapter IV. Each chord-form contains three intervals; thus in C–E–G will be found the intervals C–E, C–G, and E–G.

Harmonic Analysis should now be begun, and continued until the end of the study of harmony. (See Appendix II, 654–655.) By "Harmonic Analysis" is meant the analysis of the chords of a composition to determine whether they be major, minor, augmented, or diminished; in close or open harmony; in fundamental form or inverted; to determine which note of the chord occurs more than once, that is, which note is doubled; and to describe all the intervals in the composition. Any book of hymn-tunes will be found very useful for this purpose. The exercises in three and four parts, to be found throughout this book may also be used. If the student meets a chord which is not known to him, he should pass it over until it has been treated and explained. This analysis is of the utmost importance, and should be persisted in until the student can read chords and intervals as easily as he reads English.

COMPOUND INTERVALS

123. Intervals are Compound when the two notes comprising the interval are more than an octave apart. This does not change the name, nor the measurements of the interval. Reduce the interval into its smaller compass within the octave, and it will become a simple interval.

INTERVALS WHICH SOUND ALIKE

124. There are several intervals which sound alike and which look alike at the keyboard, using the same keys; nevertheless they have different names, because of the letters used in their spelling.

These intervals are as follows:

The minor Second, and the augmented or the diminished Prime, i.e., C–D♭, C–C♯; C–B, C–C♭.

The major Second, and the diminished Third, i. e., E–F♯, E–G♭.

The major Third, and the diminished Fourth, i. e., D–F♯, D–G♭.

The minor Third, and the augmented Second, i. e., C–E♭, C–D♯.

The perfect Fourth, and the augmented Third, i. e., C–F, C–E♯.

The augmented Fourth, and the diminished Fifth, i. e., C–F♯, C–G♭.

The diminished Fifth, and the augmented Fourth, i. e., C–G♭, C–F♯.

The perfect Fifth, and the diminished Sixth, i. e., A–E, A–F♭.

The augmented Fifth, and the minor Sixth, i. e., C–G♯, C–A♭.

The major Sixth, and the diminished Seventh, i. e., B–G♯, B–A♭.

The minor Seventh, and the augmented Sixth, i. e., C–B♭, C–A♯.

The major Seventh, and the diminished Eighth, i. e., C–B, C–C♭.

In these pairs of intervals, when heard alone, no human ear can tell which naming or spelling is used. The effect of the intervals is the same, and is absolutely independent of their names.

CONSONANT AND DISSONANT INTERVALS

125. There are but twelve intervals which the ear can distinguish, seven of which are consonant, and five dissonant.

As has been said, the naming of an interval has nothing to do with the sound of the interval.

126. The consonant intervals are: Major and minor Thirds,
Major and minor Sixths,
Perfect Fourths and perfect Fifths and
Perfect Eighths.

Any other interval which sounds like any one of these consonant intervals, whether it be major, minor, augmented, diminished, or perfect, will always be consonant.

127. The five dissonant intervals are:

The major and minor Seconds.

The major and minor Sevenths.

The augmented Fourth, or the diminished Fifth.

Any other interval which sounds like any one of these intervals, whether it be major, minor, augmented, or diminished, will always be dissonant.

Almost all text-books on Harmony contain this statement: "All augmented and diminished intervals are dissonant." The ear denies this statement. The attempt to reconcile such an assertion with his musical experience leads the student into many pitfalls, and tends to impair his musical capacity, which can be developed only through the medium of the hearing. Augmented and diminished intervals are very seldom used except in dissonant chords, but that does not necessarily make the interval dissonant. Chords are dissonant because they sound dissonant, never on account of the letter-names used in their make-up. (See full explanation in Appendix I, section B.)

128. The consonant intervals are divided into three classes, with two intervals in each class: Those with **points of repose,** which are also very musical and pleasing, i. e., the major Third and the minor Sixth; those with **points of repose,** which are bare and empty sounding, i. e., the perfect Fourth and the perfect Fifth; those without **points of repose,** i.e., the minor Third and the major Sixth. The last two intervals are very pleasant and musical, but because they have not the **point of repose** they are not entirely satisfactory.

In Appendix I, section B, the causes of these effects are explained.

129. The dissonant intervals are divided into two classes: harsh dissonances, of which there are but two, the major Seventh and the minor Second; mild dissonances, of which there are but three, the major Second and the minor Seventh, and the augmented Fourth or its counterpart, the diminished Fifth.

130. It will be seen by the foregoing that the inversion of intervals does not change the quality. If the interval has a **point of repose,** its inversion will have a **point of repose,** though in a different place; if the interval is consonant, its inversion will be consonant; if the interval is bare and empty sounding, though consonant, its inversion will have the same character; if the interval has no **point of repose,** its inversion will have no **point of repose;** if the interval is harshly dissonant, its inversion will be the same; if the interval is a mild dissonance, the inversion will be a mild dissonance.

131. The analysis of the major or minor chords will show that either one in its three simple close forms, contains all the consonant intervals (major and minor Third, major and minor Sixth, the perfect Fourth and perfect Fifth).

EAR-TRAINING FOR INTERVALS

Intervals should give the student little or no trouble, if the **point of repose, the insistent tone,** and the **quality tone** of chords have been worked out, as was explained in Chapter IV

132. As was stated in Paragraph 128, the major Third and minor Sixth, the perfect Fourth and perfect Fifth, are consonant intervals with **points of repose.** The intervals of the major Third and minor Sixth are satisfactory and complete; but these **points of repose** differ as to position, the major Third having for its **point of repose** the *lower* tone, while in the minor Sixth it is the *upper* tone; thus if a major Third be played, for example G–B, the tone which the ear desires to hear as the final tone is G, hence it is the **point of repose.** The minor Sixth has the **point of repose** on the higher tone; i. e., if B–G be played, the ear accepts G as the final tone, the **point of repose,** not B.

133. The perfect Fourth and perfect Fifth have a **point of repose,** but both intervals are blank, bare, and empty sounding, and lack quality. The perfect Fifth has the lower tone as the **point of repose;** i. e., if G–D be played, the ear will accept only the G as the finality. The perfect Fourth has the upper note as the **point of repose;** i. e., if D–G be played, the ear will accept only the G as the finality.

134. The minor Third and the major Sixth, although smooth-sounding and quite musical, are not entirely satisfactory, as they contain no **point of repose.** If E–G be played, the ear will not accept either tone as the finality, but seeks another tone as the **point of repose,** which is C. If G–E is played, the ear refuses to accept either tone as the **point of repose,** but demands another

tone as the finality, that tone being C. (The student can prove these statements in a few minutes of experimentation.)

135. Thus we have two intervals with the **point of repose** at the lower tone; the major Third (which is very musical and satisfying) and the perfect Fifth (bare and empty sounding).

136. We have two intervals with the **point of repose** at the higher tone, the minor Sixth (very musical and satisfying), and the perfect Fourth (empty sounding and lacking quality).

137. There are two intervals which are musical and very smooth sounding (the minor Third and the major Sixth), both of which contain no **point of repose.**

138. The major Third and minor Sixth contain the Root and the **quality tone** of a major chord, hence their satisfying character.

The perfect Fourth or perfect Fifth contains the Root and **insistent tone** of a major chord, but are lacking the **quality tone,** hence their emptiness and lack of quality.

The minor Third and major Sixth contain the **quality tone** and the **insistent tone** of a major chord, but have not the **point of repose,** hence demand that as the finality.

139. The dissonant intervals that can be distinguished by the ear are but five in number, the major and minor Seconds, the major and minor Sevenths, and the augmented Fourth, or its counterpart, the diminished Fifth. The major Seventh and the minor Second are harsh dissonances. (These two are inversions of each other.) The major Second and the minor Seventh are mild dissonances. (These two are inversions of each other.) The augmented Fourth, or its counterpart the diminished Fifth, is a mild dissonance. (These two are inversions of each other, and are exactly alike in every respect, except as to their letter-names.)

140. These qualities of intervals exist by virtue of the laws of acoustics, and are entirely independent of key- or scale-relation, or of the letter-names used in the spelling of the intervals.

With an interval given, the process of reasoning it out is as follows: If the interval heard is a dissonance, it can neither be a major nor a minor Third, a major nor minor Sixth, a perfect Fourth nor a perfect Fifth, because all these intervals are consonant. If it is a harsh dissonance, it cannot be a major Second, or a minor Seventh, or an augmented Fourth; therefore it must be either a minor Second or a major Seventh. After the student has memorized all the individual qualities of the various intervals, with a little practice this process of reasoning becomes automatic and very simple. If a harshly dissonant interval is heard, it must be one of two things, there being but two harshly dissonant intervals (the minor Second and the major Seventh). If a consonant interval is heard, it can be neither a major nor minor Second, a major nor minor Seventh, nor an augmented Fourth, nor diminished Fifth, because all these intervals are dissonant. If the interval has a **point of repose** on the lower tone, it must be either a perfect Fifth or a major Third; if it is a blank and empty sounding interval, it cannot be the major Third, hence there is but one thing left, the perfect Fifth. If the interval heard has a **point of repose** on the upper tone, it must be either the perfect Fourth or the minor Sixth; if it is a smooth and satisfying interval it cannot be the perfect Fourth, because that interval is bare and empty sounding, hence there is but one thing left, the minor Sixth. If the interval heard is very musical and consonant, but has no **point of repose** it must be either a minor Third or a major Sixth, easily determined. If it be a minor Third (E–G), the **point of repose** which the ear desires (C) will be outside the interval, above the G or below the E. If it be a major Sixth (G–E), the **point of repose** will fall between the two notes (g–C–e).

A great deal of practice in singing the intervals must be insisted upon, until the intervals can be distinguished without any trouble. Persistent practice in listening must be continued, and the result will be an immeasurable gain in musical feeling, appreciation, and intelligent knowledge of genuine musical effects.

DEMONSTRATION

141. In Chapter IV, Nature's Concord was defined. It was explained that the major chord is a natural phenomenon, a result of laws of acoustics. The intervals are also based upon these laws; that is, the "quality" of an interval is the result of either obedience or disobedience to these laws. Thus a major Third has a **point of repose,** and is a pleasant and satisfying interval, because in a major Third (C–E) both tones have a common generator C, and that generator, or its exact duplicate, is heard in the interval, and the generator is always the **point of repose.** In the interval C–E the exact duplicate of the generator is the lower tone, and

the **point of repose** is, of necessity, then, that lower tone C. In a minor Sixth (E–C) (the inversion of the major Third) the **point of repose** is on the upper tone, because that tone is an exact duplicate of the generator C. Thus a perfect Fifth (C–G), has a **point of repose,** because both tones have a common generator (C), and that generator is exactly represented in the interval (C–G) at the lower tone C. As the perfect Fourth is the inversion of the perfect Fifth, both tones in the interval (G–C) have a common generator, C, and the exact duplicate of that generator is at the top of the interval (G–C), therefore that note C is the **point of repose** for the interval.

142. In the two intervals, the perfect Fourth and the perfect Fifth, will be found the Root and Fifth of a major chord; but the **quality tone** is not there, hence either interval sounds empty and blank, having neither major nor minor quality, whereas in the major and minor Third and the major and minor Sixth, the **quality tone** of a major chord is present.

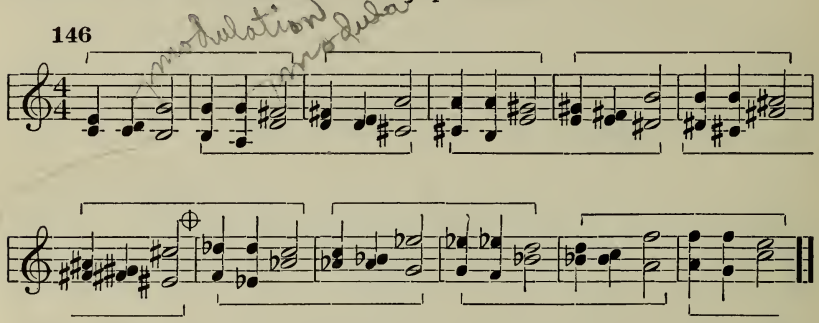
143. The minor Third and major Sixth are very pleasant and musical, but contain no **point of repose,** because in both intervals, for instance E–G and G–E, neither tone is generated from the other; that is, the overtones produced from E will not disclose a G, nor will the overtones produced from G show an E; but both tones (E–G) point unmistakably to a common generator C, and the ear demands that generator or an exact duplicate, as the **point of repose** for either interval (E–G and G–E). These two intervals contain the **quality tone** and the **insistent tone** of a major chord, but the Root is lacking, hence the intervals are not eminently satisfactory.

144. The five dissonant intervals contain no **point of repose,** nor do they have a common generator, and cannot be made pleasant and agreeable by the addition of another tone. These dissonant intervals are not a part of Nature's Concord, hence are not in accord with the system of overtones, and their dissonant qualities are a result. (See Appendix I, section B.)

INTERVAL EXERCISES

145. In these two-part exercises we have a brief melodic idea carried out in the upper and in the lower parts. The exercises and modulations are in sequence form, smooth and musical, and the progressions and resolutions are in ordinary use. The student will find these exercises eminently practical.

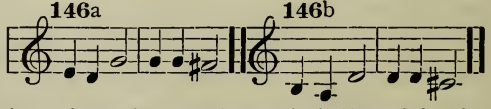
146



Ex. 146 uses the major Third, then the major Second, which, being a dissonance, must resolve (see 82). It here resolves in the most natural way,[1] to a minor Sixth, the lower tone of the major Second moving down a half-step, and the upper tone moving up a perfect Fourth. The resolution of this major Second (C–D) into the minor Sixth (B–G) has caused a modulation from the key of **C** into the key of **G**. In other words, when C–E was played, the ear accepted C as the **point of repose**; but C–D (the major Second), which has no **point of repose**, and its resolution to B–G (the minor Sixth), have destroyed the old **point of repose**, C, and created a new one, G, thus causing the modulation.

In the second measure the first interval is a minor Sixth (the inversion of the major Third); then a minor Seventh (inversion of a major Second), which resolves in the most natural way to a major Third (the inversion of a minor Sixth). The minor Seventh A–G, resolves by the upper tone moving down a half-step, and the lower tone moving up a perfect Fourth, these two parts exactly reversing the movements in the first measure. The minor Seventh A–G, with its resolution into D–F♯, has caused G to be abandoned as the **point of repose**, and D to be substituted. This causes a modulation from **G** into **D**. In measures 1 and 2, in the upper voice, is seen a little melodic figure (146a) which, beginning in second measure, is exactly imitated in the lower part a perfect Fourth below (146b).

146a **146b**



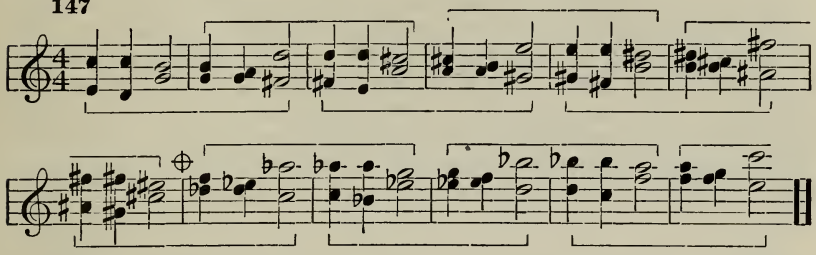
This imitation is kept up throughout the entire exercise, as is indicated by the

[1] The resolution which is most satisfying to the natural ear of an ordinarily musical person.

slurs.[1] The modulations are around the "Circle of Keys" (major) to the right from C to G, to D, to A, to E, to B, to F♯, to C♯, to A♭, to E♭, to B♭, to F, to C.

At ⊕ an enharmonic change is made, that is, the same sounds and the same piano-keys are used, but the names of the notes are changed.

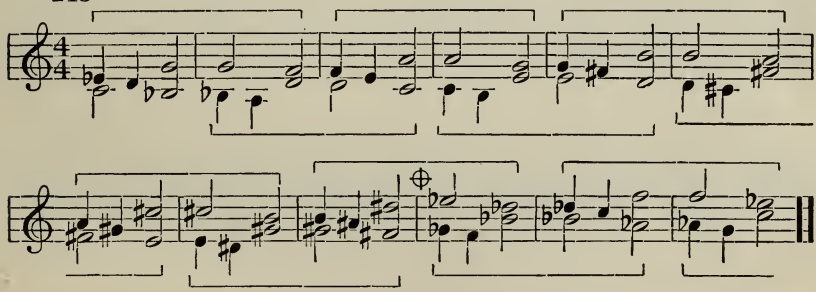
147



Ex. 147 is 146 inverted. The lower voice now becomes the upper voice, and the upper voice becomes the lower. The inversion of the original major Third gives a minor Sixth; the inversion of the original major Second gives a minor Seventh. The resolutions are the same in both exercises. The modulations are the same as before. The melodic figure now begins in the lower part and is imitated in the upper part, a perfect Fifth higher. At ⊕ the enharmonic change is again made.

Exs. 146 and 147 must be carefully compared in all their respects, as to intervals and their inversions ("major intervals when inverted, become minor intervals: minor intervals when inverted, become major intervals"); to see that the modulations are the same; to observe closely the melodic figure and its imitation and transference from the upper to the lower voice: and careful attention must be given in order to fix these intervals and resolutions in the memory. Students should familiarize themselves with these two exercises so that they can begin with any major Third or minor Sixth and carry out the figure and modulations around the Circle of Keys.

148

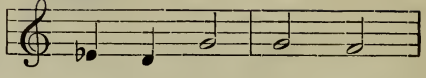


Ex. 148 uses the minor Third and major Second with resolution to a major Sixth. The resolution of this major Second to a major Sixth, (and its inversion, a minor Seventh into a minor Third), while very common in compositions,

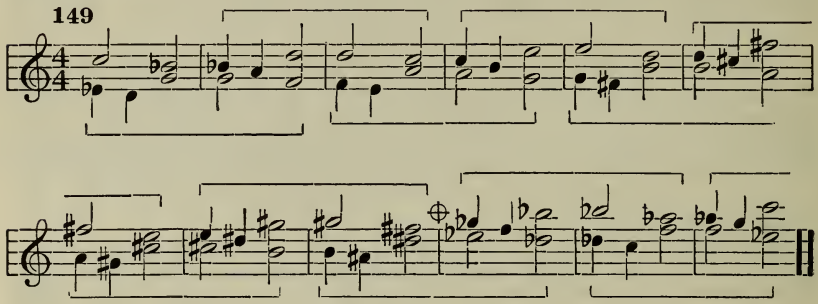
[1] See 197.

is not as satisfactory as the resolution found in Exercises 146 and 147. In measures 1 and 2 the upper part has the melodic figure (148a), which is repeated through the exercise one whole-step higher in the same part, and is exactly imitated in the lower part on the perfect Fourth below. This repetition and imitation is indicated by the slurs. The modulations are around the Circle of Keys (minor) to the right, from *c* to *g*, to *d*, to *a*, to *b*, to *f*♯, to *c*♯, to *g*♯, to *d*♯, to *b*♭, to *f*, to *c*. At ⊕ an enharmonic change is made. This series of intervals and modulations is not very satisfactory to the ear, because the two consonant intervals here used, the minor Third and major Sixth, have no point of repose.

148a

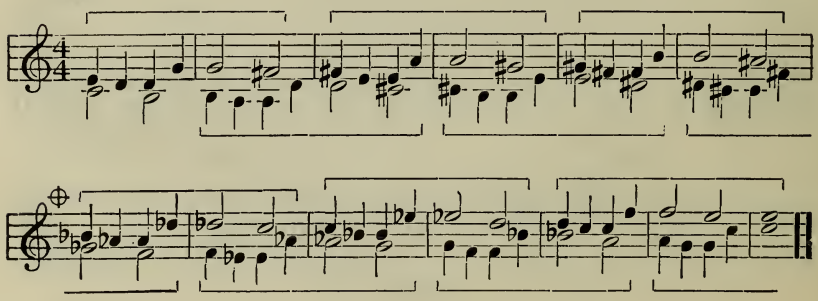


149



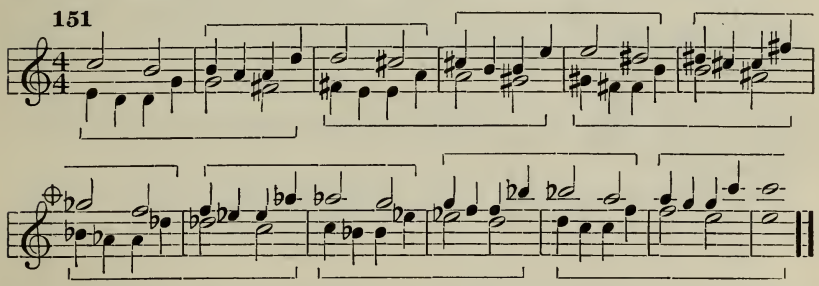
Ex. 149 is 148 inverted. The inversion of the minor Third gives a major Sixth; the inversion of the major Sixth gives a minor Third. The modulations remain the same as in Ex. 148. The melodic idea in this case begins in the lower part, and is imitated in the upper part a perfect Fifth above. The slurs indicate the melodic idea and its imitation. At ⊕ the enharmonic change is again made. Exs. 148 and 149 should be compared in the same manner as was directed with 146 and 147.

150



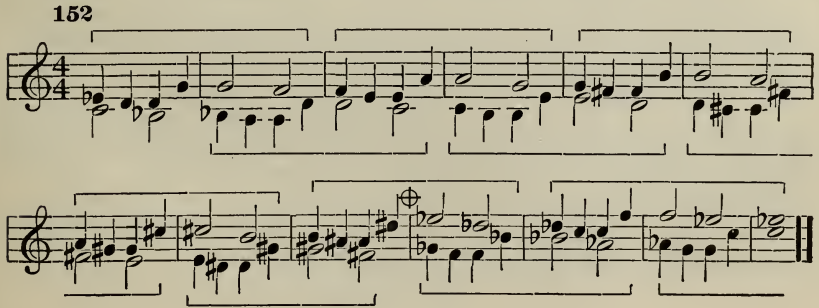
Ex. 150 uses the major Third and major Second with a resolution into a minor Third, after which the upper tone skips up a perfect Fourth, forming a minor Sixth with the lower tone. The resolution of this major Second into a minor Third is very common, but not very satisfactory, for the minor Third contains no **point of repose**; but the upper note skipping up, as it does, supplies the needed **point of repose,** the root of the G major chord. It should be noticed that in the third and fourth beats of each measure all the notes of the major chord are heard. In the second measure is seen a minor Sixth and minor Seventh with resolution to a major Sixth (which contains no **point of repose**), but the lower note moving up a perfect Fourth supplies the needed **point** and gives the root of the D major chord. In measures 1 and 2 the upper part has the melodic idea, which is constantly repeated throughout, as is indicated by the slurs. In measures 2 and 3 this figure is exactly imitated on the perfect Fourth below, by the lower part, and again the imitation is continued throughout as shown by the slurs. At ⊕ an enharmonic change is made from F♯ to G♭. The modulations are around the Circle of Keys (major) to the right.

151



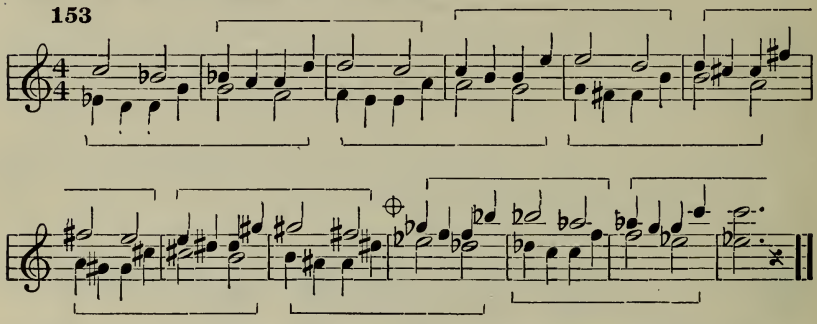
Ex. 151 is the inversion of 150. The inversion of the major Third gives the minor Sixth, etc. The modulations remain the same. The melodic figure now begins in the lower part, and is strictly imitated in the upper part a perfect Fifth higher. At ⊕ is the enharmonic change. Exs. 150 and 151 are to be compared, and Exs. 146 and 147 are to be compared with 150 and 151.

152



Ex. 152 is somewhat similar to 148, except the resolution of the major Second, which now resolves to a major Third, and except that of the minor Seventh which now resolves to a minor Sixth. The melodic figure begins in the upper voice in measures 1 and 2, and the imitation of the figure makes its appearance in the lower part in measures 2 and 3, as indicated by the slurs. The modulations are through the minor keys, around the Circle of Keys to the right; from *c* to *g*, to *d*, to *a*, to *e*, to *b*, to *f*♯, to *c*♯, to *g*♯, to *e*♭, to *b*♭, to *f*, to *c*, completing the Circle. At ⊕ is the enharmonic change.

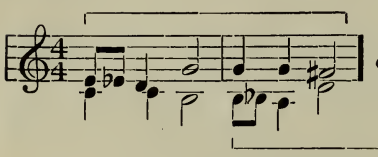
153



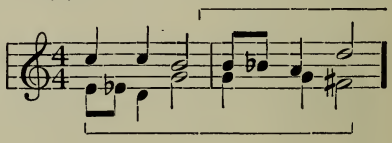
Ex. 153 is the inversion of 152. They are to be compared with Exs. 146, 147, 148, 149, 150, 151.

From this point on, the student will find exercises which he is expected to finish, writing and playing them until the first interval is again reached.

154

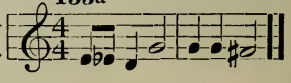


155



Ex. 154 is in all essentials the same as 146. Between the major Third, C–E, and the major Second C–D, an E♭ is inserted. This new note does not come on the accent, does not affect the harmonic outline, and is called a "passing tone" because we pass from one principal tone E, into another principal tone D, through this "passing tone" E♭.[1] The melodic figure (155a) begins in the upper part, and is exactly imitated by the lower part on the perfect Fourth below. The resolutions of the Second and Seventh are as in 146. The modulations are around the Circle of Keys (major) to the right.

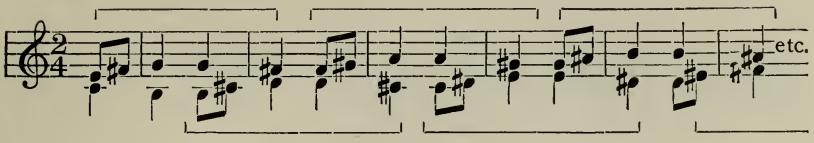
155a



The student should be able to begin with any major Third or minor Sixth, and complete the exercise around the Circle of Keys.

[1] See 543 to 549.

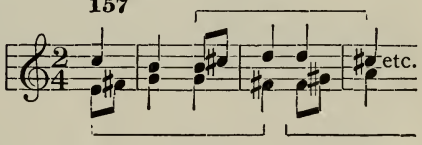
156



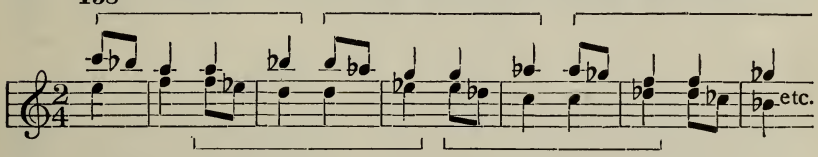
Ex. 156 uses the major Third, then the augmented Fourth, with the most natural resolution of that dissonant interval into the minor Sixth. The augmented Fourth was made by the upper tone of the major Third moving up a whole-step, then the natural resolution of that augmented Fourth is made by both tones moving apart a half-step. The minor Sixth (to which the augmented Fourth resolved) is the inversion of a major Third. Now the minor Sixth becomes a diminished Fifth (the inversion of an augmented Fourth) by the lower tone moving up a whole-step ; then the diminished Fifth resolves into a major Third, both tones of the diminished Fifth converging by half-steps. The melodic figure and its strict imitation in the perfect Fourth below are shown by the slurs. The modulations are around the Circle of Keys to the right.

Ex. 157 is the inversion of 156. The original Third has become a minor Sixth ; the augmented Fourth has become a diminished Fifth. The melodic figure begins in the lower part, and is strictly imitated on the perfect Fifth above, in the upper voice.

157



158



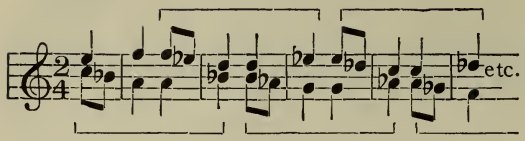
In Ex. 158 the diminished Fifth and augmented Fourth are used in a slightly different manner. The resolutions are as before. The melodic figure and its imitation are shown by the slurs. The modulations are now around the Circle of Keys *to the left*, into the subdominant keys.

Ex. 159 is the inversion of 158. The modulations, melodic figures, etc., are the same. These exercises are to be played at the piano until the student can begin with any major Third, or minor Sixth, and carry out the succession around the Circle of Keys.

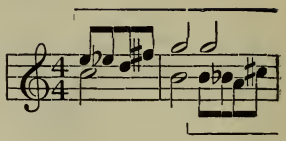
Ex. 160 is a combination of 154 and 156. The melodic figures are made more elaborate and are indicated in the usual manner.

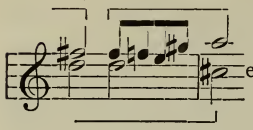
Ex. 161 is the inversion of 160.

159

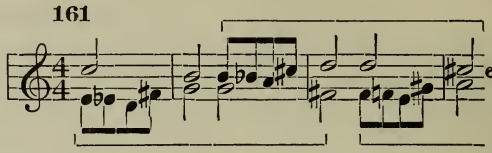


160



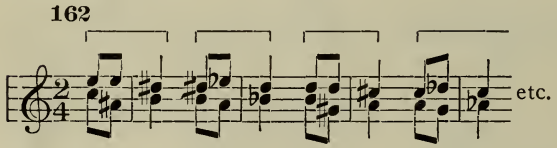


161

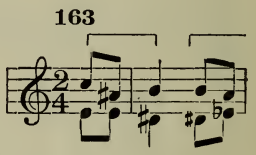


In Chapter I it was explained that 4 and 7 of the scale were very important tones, fixing the key. Exs. 156, 157, 158, 159, 160, and 161 use these tones; that is, the augmented Fourth or the diminished Fifth (which resolves, causing the modulation) contains both 4 and 7 of the new key to which the modulation is made. Thus in Ex. 156, in the first augmented Fourth which occurs, (C–F♯), C is 4 in **G**, and F♯ is 7, etc. Again, in Ex. 158 in the first diminished Fifth (E–B♭), E is 7 of **F** (to which the modulation is made) and B♭ is 4. 4 and 7 of the scales, causing the modulations, will be found invariably occurring in these six exercises.

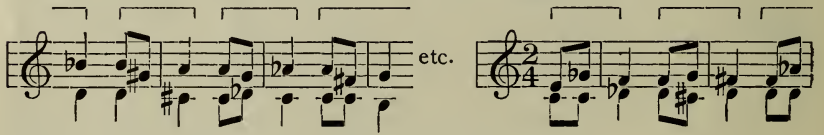
162



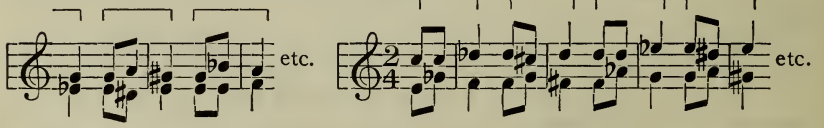
163



164



165



Ex. 162 uses only the major Third, and the diminished Fifth, resolving to the major Third. The modulations now descend by half-steps; from **C** to

B–B♭–A–A♭, etc. A comparison between Exs. 162 and 159 should now be made. The first interval is the same in both; the second interval in each has the same sound, and, at the keyboard, these two intervals look alike; but one (in 162) is a diminished Fifth, while the other (in 159) is an augmented Fourth. On the other hand, in 159, that interval (B♭–E) is 4 and 7 in the scale of **F**, and the interval resolves accordingly; but in Ex. 162, that interval, now written A♯–E, is 7 and 4 in the scale of **B**, and resolves accordingly.

(Read again, carefully, Chapter III, on the Relation of Keys.)

Ex. 163 is the inverted form of 162. The modulations, the resolutions of the dissonant intervals, etc., remain the same.

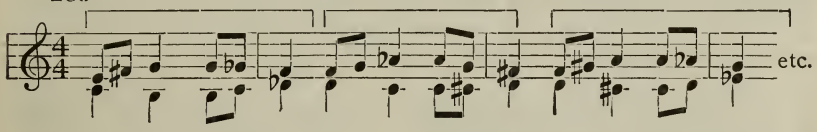
Ex. 163 should be contrasted with 158, in order that the student may be impressed by the change in the naming of the interval made necessary by the change of key. The enharmonic changes made throughout Exs. 162 and 163 are necessary because of the change of names in passing from one key to another.

Ex. 164 uses but two intervals, the major Third and the diminished Fifth, with resolution to a major Third. The modulations are now upwards by half-steps.

Exs. 164 and 156 should be compared, noticing the difference in the naming of the second interval (4 and 7 in one key, and 7 and 4 in the other). The enharmonic changes are needed to make the names fit the new key.

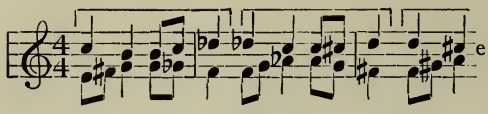
Ex. 165 is the inversion of 164. Exs. 165 and 157 are to be compared. Exs. 156 to 165 are studies showing the importance of the **Characteristic Tones** of the keys.

166

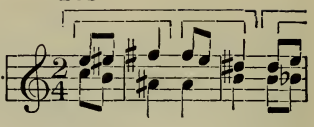


Ex. 166 uses the major Third, the augmented Fourth, the minor Sixth and the diminished Fifth. The resolutions of the dissonant intervals are the same as in the preceding exercises. The augmented Fourth and diminished Fifth, which sound exactly alike and look alike at the keyboard, are shown very clearly here. The difference in the naming of the notes of which these intervals are composed is caused by their being 4 and 7 in one scale, and 7 and 4 in the other scale; thus the first measure has the augmented Fourth C–F♯, and the diminished Fifth C–G♭, which sound exactly alike; but in the augmented Fourth C–F♯, C is 4 and F♯ is 7 in the scale to which the modulation is made, and the dissonant interval resolves by expansion, each tone moving a half-step. When the diminished Fifth, C–G♭ is used, the modulation is to **D♭**, and C is 7 while G♭ is 4 of that scale, and the dissonant interval resolves by contraction, each tone moving a half-step. The modulations are now from **C** to **G**, to **D♭**, to **A♭**, to **D**, to **A**, to **E♭**, etc.

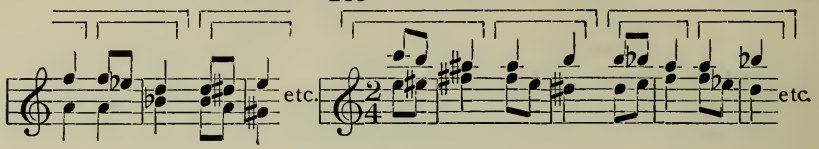
167



168



169



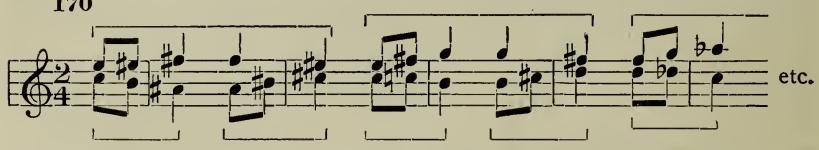
Ex. 167 is the inversion of Ex. 166. The modulations, and resolutions of the augmented Fourth and diminished Fifth being the same.

Ex. 168 is somewhat similar to 166 and 167. The major Third, augmented Fourth, diminished Fifth and minor Sixth are again used. The resolutions are the same for the dissonant intervals. This exercise also shows the importance of 4 and of 7 of the scale, the notes in the augmented Fourth and diminished Fifth always being 4 and 7, or 7 and 4 respectively, of the key to which the modulation is made. The modulations are now from **C** to **F♯**, to **B**, to **F**, to **B♭**, etc.

Ex. 169 is the inversion of 168 and the two exercises are to be compared, measure for measure. In Exs. 168 and 169, the second interval, B – E♯, or E♯ – B, shows the relation between the key of **C** (in which the exercises begin) and the key of **F♯** to which the modulation is made by means of the dissonant interval B – E♯ or E♯ – B. The two tones of which this interval is composed are 7 and 4 in the key of **C**, or enharmonically, 4 and 7 in the key of **F♯**. (See Chapter III.)

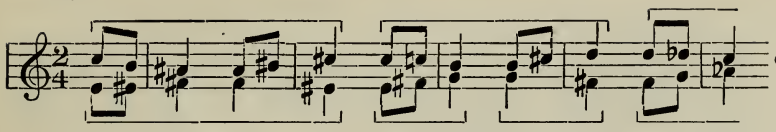
The general tendency of Exs. 166 – 167 is upwards, while the general tendency in Exs. 168 – 169 is downwards. It is essential that the student become so familiar with the above four exercises that he can take any major Third or minor Sixth as the starting-point for either sequence, and complete the modulations.

170



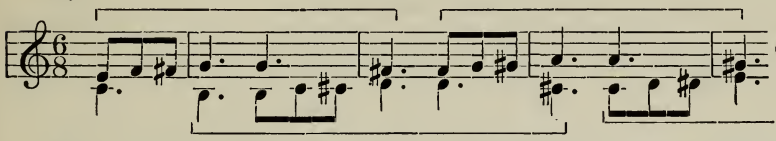
Ex. 170 is very similar to 166, 167, 168, and 169. The **Characteristic Tones** of the scales are again the medium of modulation, these two tones forming the augmented Fourth or the diminished Fifth by means of which the modulations are made

171



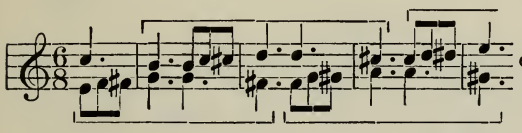
Ex. 171 is the inversion of 170. The general movement of modulation in Exs. 170 and 171 is upwards: from C to F♯, to C♯, to G, to D, to A♭, etc.

172

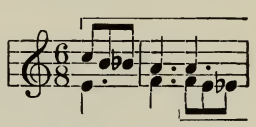


Ex. 172 is essentially the same as 156, the only difference being a passing-tone.[1] This passing-tone appears between the major Third and the augmented Fourth; and again between the minor Sixth and the diminished Fifth. It serves to make the melodic figure smoother and more flowing, but has no influence upon the harmonic outline. The slurs indicate the melodic idea and its imitation.

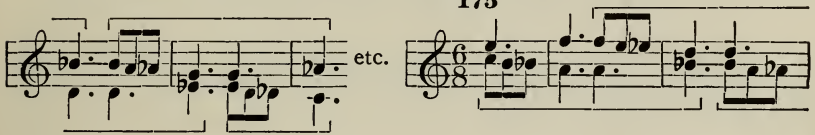
173



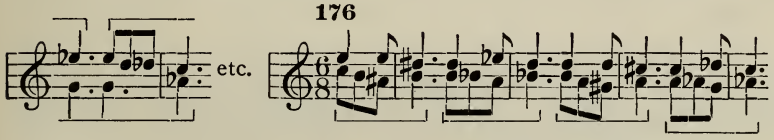
174



175



176



Ex. 173 is the inversion of 172. Exs. 173 and 157 are alike in all essentials, the only difference being in the passing-tone.

Ex. 174 is in all essentials the same as 158, the only difference being in the passing-tone which comes between the minor Sixth and the diminished Fifth, and again between the major Third and the augmented Fourth. Ex. 174 is to be compared with 158, 157, 156, 172, 171, 170, 169, 168, 167, 166, 165, and 164.

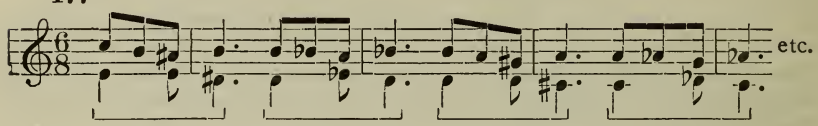
[1] See 543–549.

Ex. 175 is the inversion of 174, and is, in all essentials, the same as 159, with which it should be compared.

Always remember that the written notes are of no value in themselves, and represent but sounds and combinations of sounds. These sounds and their effects are entirely independent of the letter-names, the names merely being an incident in the means of representation to the eye. The essential thing is the effect upon the ear. If the student is able to play at the piano all the exercises in the book and can discriminate, by ear, between them, the writing of them (representing the sounds to the eye) will give no trouble.

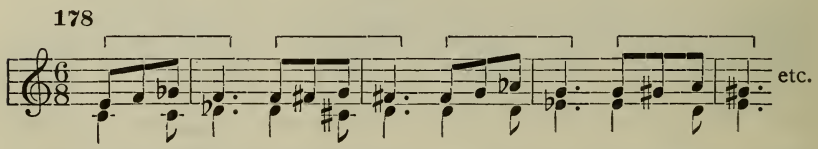
Ex. 176 is essentially the same as 162, with which it should be compared. In 176 a passing tone is used between the major Third and the diminished Fifth.

177



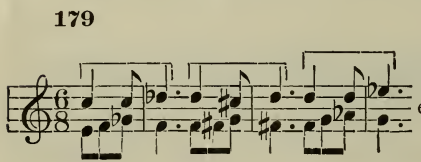
Ex. 177 is the inversion of 176, and is practically the same as 163, with which it should be compared.

178

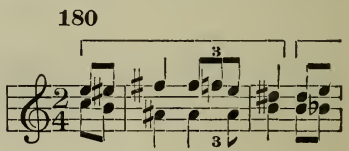


Ex. 178 is about the same as 164, with which it is to be compared. The only difference is in the passing-tone which occurs between the major Third and the diminished Fifth.

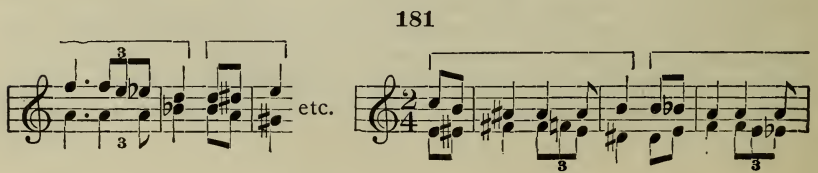
179



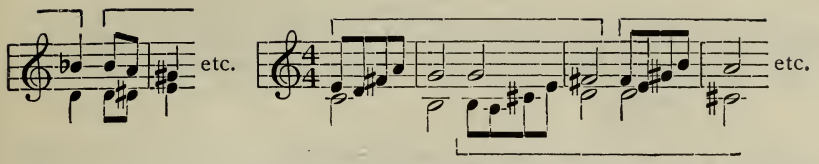
180



181



182



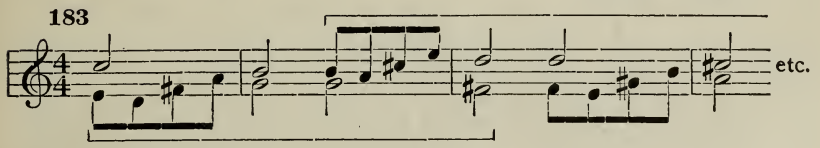
Ex. 179 is the inversion of 178, and is a development of 165, with which it is to be compared.

Ex. 180 is about the same as 168, with which it is to be compared. The only difference between these two is the embellishment of the passing-tone between the minor Sixth and the diminished Fifth.

Ex. 181 is the inversion of 180, and is a development of 169, with which it is to be compared.

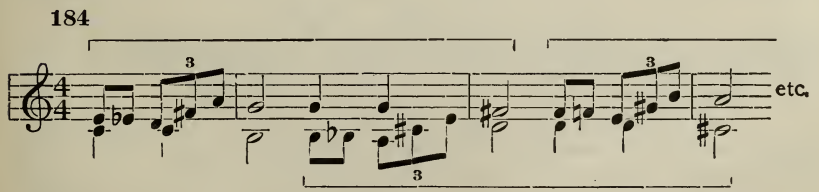
Ex. 182 is in all essentials the same as a combination of 146 and 156, with which it is to be compared. The only difference is that a new melodic tone is introduced to make the idea more flowing and musical. The melodic figure with its exact imitation is again indicated by the slurs.

183



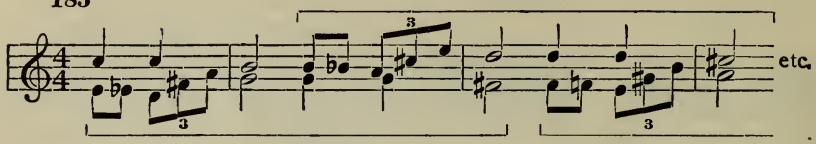
Ex. 183 is the inversion of 182, and is in all essentials the same as a combination of 147 and 157, with which it should be compared. (In Exs. 182 and 183 the complete Dominant 7th chord is outlined on the last half of the third and the fourth beats in each measure. (See Chapter IX on the Dominant 7th Chord.)

184



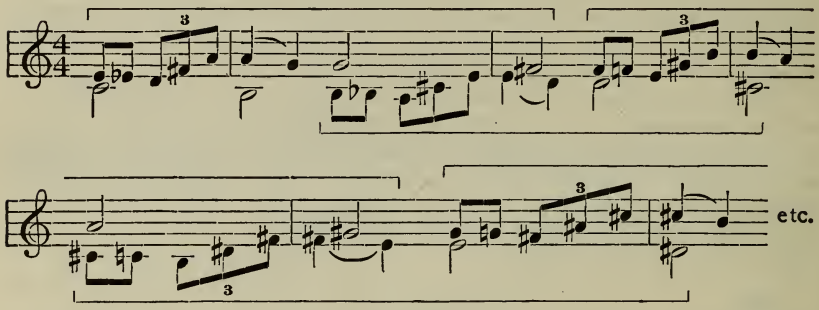
Ex. 184 is in all essentials the same as 160, with which it is to be compared; in 184 there is an additional note in the melodic idea.

185



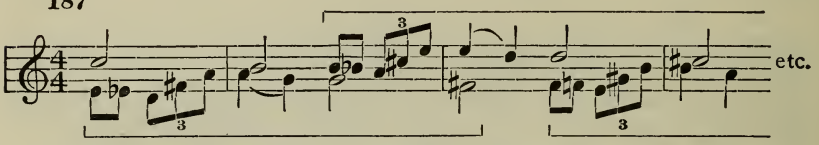
Ex. 185 is the inversion of 184, and is essentially the same as 161, with which it is to be compared. Compare also 185 and 183.

186



Ex. 186 is in many particulars the same as 184, but on the first count of the measure an important means of embellishment is introduced. On the first count of the first complete measure, the ear naturally expects B–G (the minor Sixth), but hears instead B–A. The A holds back the G one beat, and on the second count of the measure the ear then hears what it expected, G. This effect is called a **Suspension,**[1] that is, the tone that was expected was held back, **suspended,** by the tone above it. In the second complete measure, on the first beat, the ear expects D–F♯, but the D is **suspended,** held back by E. This holding back of one tone one beat is continued throughout the exercise. Ex. 186 is to be compared with Exs. 184, 183, 182, 181, 160, 161, 157 and 156.

187



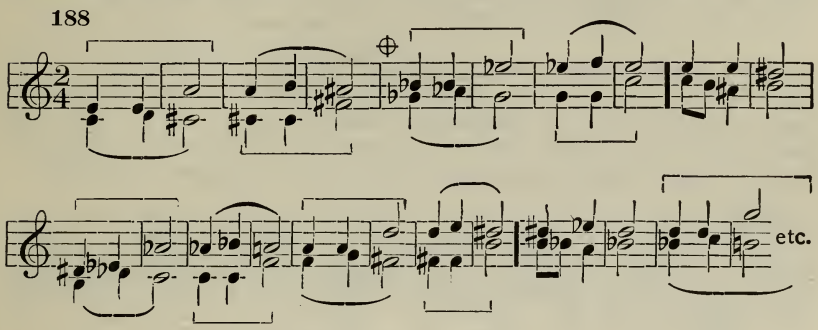
Ex. 187 is the inversion of 186 and is very similar to 185. The effect of the suspension is the same as in 186. This suspension, by means of the minor Seventh and the major Second, shows a different resolution of those two dissonant intervals. Exs. 186 and 187 should be compared with 146, 147, 148, 149,

[1] See 528 to 574.

150, 151, 152 and 153, the student noticing the differences in the resolution of the major Second and minor Seventh.

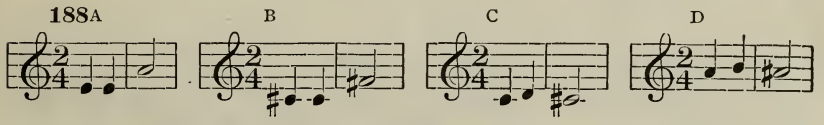
A suspension has no value as an embellishment, unless it be a dissonance. It should occur on the beat.

188



In Ex. 146 the first interval, a major Third, becomes a major Second as the upper tone moves down a whole step. Ex. 188 begins with the same major Third, but the interval becomes a major Second as the lower tone moves **up** a whole step. The resolution of the major Second is regular and natural. The modulations are now from **C** to **A**, to **F♯**, to **E♭**, to **C**. As this does not complete all the major keys, at the ninth measure a modulation, by means of the first measure of Ex. 176, is made to **B**, after which the figure is continued, modulating from **B** to **A♭**, to **F**, to **D**, to **B**; then a similar modulation, as in measure nine, is made to **B♭**. The figure is to be finished, continuing until all the major keys have been completed.

In Ex. 188 a peculiar method of construction is shown; a double melodic figure is going on and is being imitated.[1] In the first two measures the upper

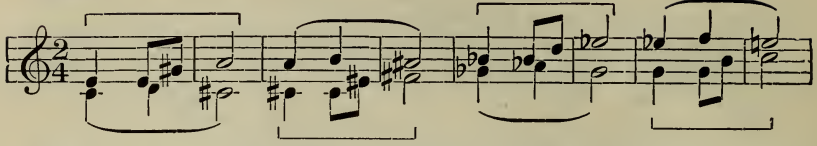


part has a melodic figure (188 A) which is immediately imitated by the lower part in the third and fourth measures, on the minor Third below (B); meanwhile, the lower part in measures 1–2 has the melodic idea (C) which is immediately imitated by the upper part in measures 3–4, on the major Sixth above, (D[2]). The complete working out of 188 will cause its own inversion, making it unnecessary to write it out as another exercise. The double melodic idea is shown by the peculiar double slurring.

[1] See 197 and accompanying footnote.

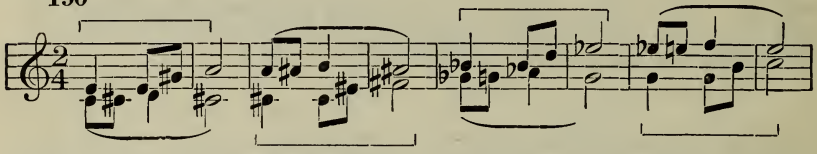
[2] See Footnote to 197.

189



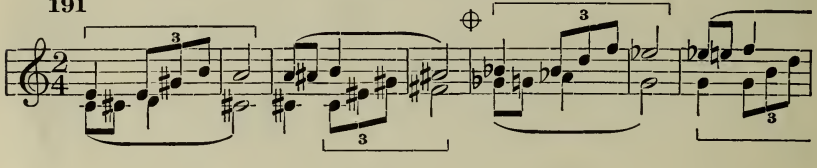
Ex. 189 is the same as 188, except that the augmented Fourth and diminished Fifth, which are introduced, point more strongly to the modulation, as these intervals contain the **characteristic tones** of the new key to which the modulation is being made. The double melodic idea is shown by the peculiar slurring. The complete working out of this exercise will cause the inversion.

190

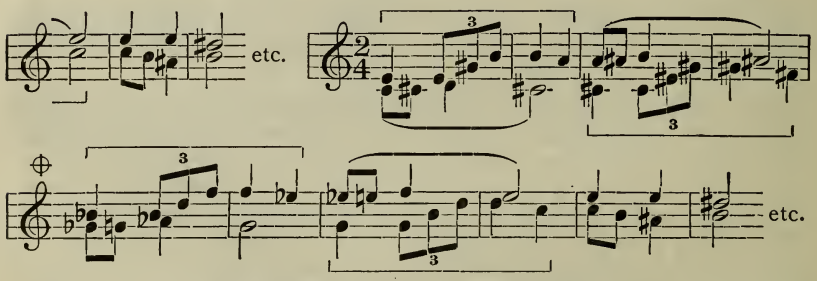


Ex. 190 is a slight embellishment, by means of a passing-tone, of 189. The passing tone occurs between the major Third and the major Second, and again between the minor Sixth and the minor Seventh. Ex. 189 is to be finished in the same manner as 188 and 189, and the complete working out will cause the inversion. Exs. 190, 189 and 188 should be carefully compared.

191



192

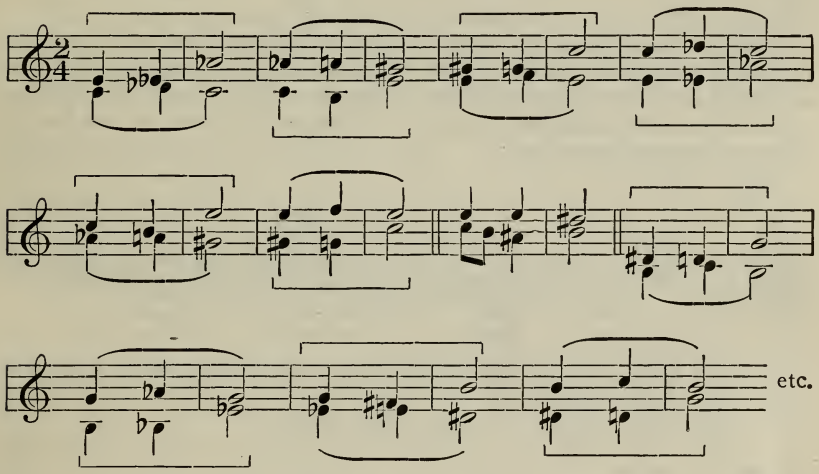


Ex. 191 is a further development of 189 and 190, and is the most musical and smoothest of the three. The completion of this exercise will cause its own inversion.

Ex. 192 is a still further development of 189, 190 and 191. It uses the suspension in the same manner as Exs. 186 and 187, with which it should be compared. The minor Seventh on the first count of the second measure holds back what the ear expects, the minor Sixth, and in the fourth measure the major Second holds back what the ear expects, a major Third. The completion of 192 causes its own inversion.

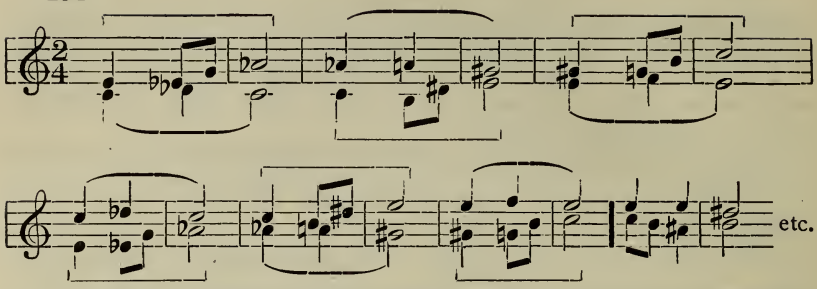
Exs. 188, 189, 190, 191 and 192 show the logical growth of a simple melodic idea.

193



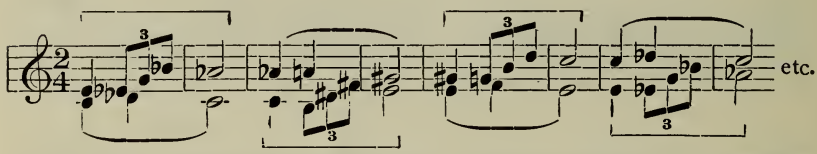
In Ex. 146 the major Third becomes a major Second as the upper tone moves down a whole-step. In Ex. 188 the same major Third becomes a major Second as the lower tone moves up a whole-step. In 193 the major Third becomes a major Second as the tones move towards one another, the low tone moving up a half-step, and the upper tone moving down a half-step; then this resultant major Second resolves naturally, causing a modulation into the key of A♭. As each tone of the first interval in measure 1 moved together by half-steps to form the second interval, so in measure 3, the first interval of a minor Sixth (which is the inversion of a major Third) will move apart by half-steps to form the next interval, the minor Seventh which resolves naturally. The modulations are now from C to A♭, to E, to C. As this series includes but three keys, in measure 13 a modulation is made to B, from which the figure is continued through B, G, E♭, B, after which a modulation is made to B♭, from which point it must be completed, until all the major keys have been gone through. The double melodic idea is shown by the slurring.

194



Ex. 194 is the same as 193, except the addition of the augmented Fourth and the diminished Fifth which are inserted to cause greater smoothness in the melodic idea. These augmented Fourths and diminished Fifths, as in the case of numerous other exercises, contain the **characteristic tones** of the key to which the modulation is made.

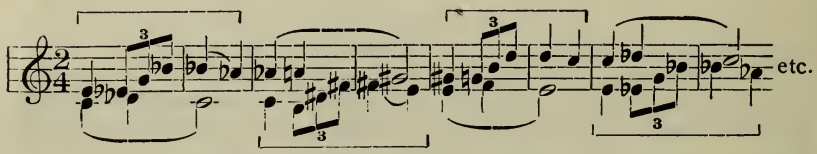
195



Ex. 195 is a further development of 193 and 194, by the addition of another tone in one of the melodic ideas.

Compare Exs. 182, 183, 184, 185 and 191 with 195.

196



Ex. 196 is a development, by means of a suspension, of the three preceding exercises. The suspension occurs in measures 2, 4, 6, etc.

197. Exs. 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, and 172, 173, 174, 175, and 182 to 196 are examples of **double counterpoint**;[1]

[1] Counterpoint literally means "point against" or "note against note," and is the art of combining melodies or melodic ideas one against the other. "Counterpoint is the free and independent progression or movement of a voice or part against or in relation to some other part which is already present as a given theme or subject." (Richter.) Double counterpoint is that species of counterpoint which admits of the inversion of the parts, the upper becoming the lower, and the lower becoming the upper. For excellent examples of two-part writing see the two-part exercises in "Melodia" by Cole and Lewis, and for many examples of double counterpoint in two-part writing see the Two-Part Inventions of Bach.

that is, we have a double melodic idea which can be inverted at pleasure, the effect remaining as musical in one form as in the other.

These two-part exercises will prove of great value. They are musical, the progressions are those in common use, they follow a logical method of development, are in correct form, and show the simplicity of various modulations. The student, if he wishes, by using the material found in these fifty two-part exercises, may construct any number of two-part exercises which will be somewhat different from the original ones.

EXERCISES IN EAR-TRAINING

The training of the ear to fix the intervals, resolutions, melodic pregressions, and modulations; the feeling for tonality, consonance and dissonance, and **points of repose,** develops what every real musician must have and what is the prime purpose of all musical study, i.e., musical feeling and intelligence.

At first the exercises should be played so slowly that the students may follow the movements of the different parts. Divide the class into halves; let one-half sing the upper part of the exercise, the other, the lower part. Again play slowly, requiring the students to sing the **point of repose** in each consonant interval. Let one-half of the class sing the lower tone of the dissonant interval, the other half singing the upper tone; then let them sing the various resolutions of that interval as found throughout the fifty two-part exercises.

Play one note, then require the class to sing the major Third above that note; then the major Third below that note; the perfect Fifth above; the perfect Fifth below; the minor Third above; the minor Third below; the perfect Fourth above; the perfect Fourth below; major Second above; the major Second below; the minor Sixth above; the minor Sixth below; the minor Second above; the minor Second below; the major Sixth above; the major Sixth below; the augmented Fourth above; the augmented Fourth below; the minor Seventh above; the minor Seventh below; the major Seventh above; the major Seventh below.

Again play one note, requiring the class to sing the major Third above, then the minor Sixth below; the perfect Fifth above, the perfect Fourth below; the minor Third above, the major Sixth below; the major Sixth above, the minor Third below; the minor Sixth above, the major Third below; the major Second above, the minor Seventh below; the augmented Fourth above, the diminished Fifth below; the minor Second above, the major Seventh below; the minor Seventh above, the major Second below; the major Seventh above, the minor Second below; the perfect Fourth above, the perfect Fifth below.

Keep up these exercises until the student can readily distinguish all the recognizable intervals.

TECHNICAL TERMS USED IN CHAPTERS IV AND V

Three-toned chord.
Augmented chord.
Diminished chord.
Consonant.
Dissonant.
Concord.
Discord.
Inversion.
Triad.
Common chord.
Major common chord.
Minor common chord.
Aug. common chord.
Dim. common chord.
Major triad.
Minor triad.
Augmented triad.
Diminished triad.
Double sharp.
Double flat.
Key-relationship.
Open harmony.
Close harmony.
Fundamental form.
First inversion.
Second inversion.
Three-Five chord.
Three-Six chord.
Six chord.
Chord of the Sixth.
Six-Four chord.
Figured bass.
Absolute pitch.
Nature's Concord.
Perfect interval.
Harmonic analysis.
Passing-tone.
Dominant 7th-chord.
Embellishment.
Double Counterpoint.
Double melodic idea.
Root.
Fifth.
Third.
Concordant.
Resolution.
Melodic.
Harmonic.
Sequence.
Suspension.

CHAPTER VI

THE RELATION OF THREE-TONED CHORDS TO A KEY

198. The chords on the tonic, the sub-dominant, and the dominant in major keys are always major chords.

The chords on the super-tonic, the mediant, and the sub-mediant of major keys are always minor chords.

The chords on the leading-tone of major scales are always diminished chords.

199. The chords on the tonic, the sub-dominant, and the dominant in the normal minor keys are always minor chords.

The chords on the mediant, the sub-mediant, and the sub-tonic of the normal minor keys are always major chords.

The chords on the supertonic of the normal minor keys are always diminished chords.

200. The chords on the tonic and the sub-dominant of the harmonic minor keys are always minor chords.

The chords on the dominant and the sub-mediant of the harmonic minor keys are always major chords.

The chords on the supertonic and the leading-tone of the harmonic minor keys are always diminished chords.

The chords on the mediant of the harmonic minor keys are always augmented chords.

201. The chords on the tonic, the dominant, and the sub-dominant (1–4–5) in major and minor keys are called Principal Chords. The chords on the supertonic, the mediant, sub-mediant, and the sub-tonic (2–3–6–7) of major and minor keys are called Subordinate Chords.

202. A major chord may thus belong to several keys: for instance, the C major chord (C–E–G) may be the tonic in **C; or**

the sub-dominant in **G**; or the dominant in **F**; or the mediant in a normal minor; or the dominant in *f* harmonic minor; or the sub-mediant in *e* normal or harmonic minor or the sub-tonic in *d* normal minor.

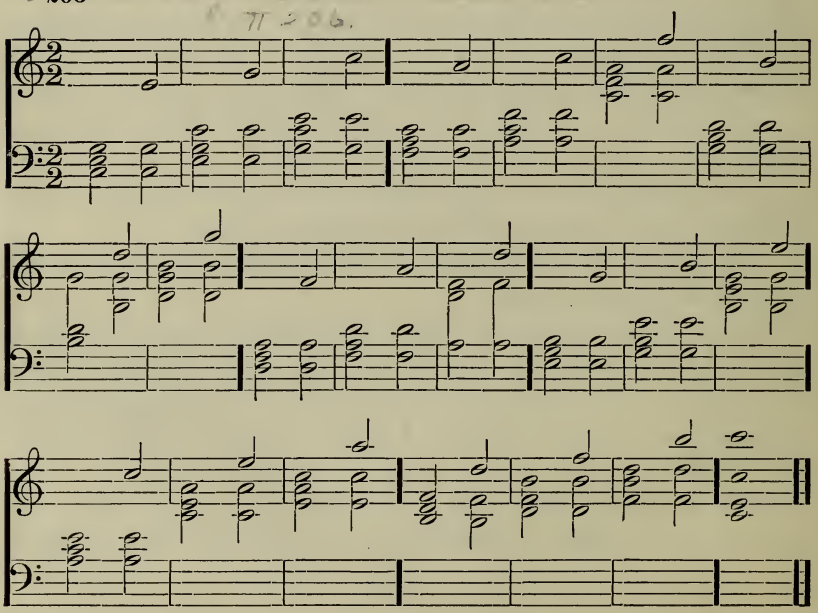
203. A minor chord may belong to several keys: for instance, the minor chord on A (A–C–E) may be on the supertonic of **G**; or on the mediant of **F**; or on the sub-mediant of **C**; or on the tonic of *a* normal and harmonic minor; or on the sub-dominant of *e* normal and harmonic minor; or on the dominant of *d* normal minor.

204. A diminished chord may be on the leading-tone of a harmonic minor key; for instance, B–D–F may be in *c*, on the leading-tone; or on the supertonic of *a*; or on the leading tone of **C**.

205. The augmented chord occurs only in the harmonic minor keys, on the mediant.

The student should now determine to which keys each major, minor, augmented, and diminished chord may belong.

206



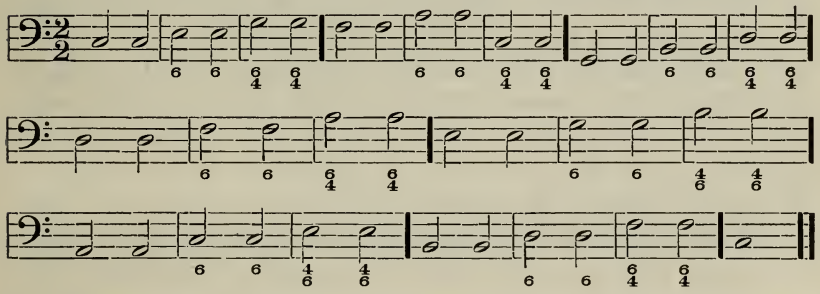
Ex. 206 is self-explanatory. The first measure contains the tonic chord of C in fundamental form, in close and open harmony; the second measure is the first inversion of the tonic chord, in close and open harmony; the third measure contains the second inversion of the tonic chord in close and open harmony. The chord on the sub-dominant (4) is illustrated in the same manner; then the dominant chord, the supertonic chord, the mediant, the sub-mediant, and the sub-tonic. Ex. 206 is to be put in all major keys, and illustrated at the piano, and recited away from the piano.

207. Ex. 207 is the same as 206, except that it is to be played and recited in all the normal minor keys.

208. Ex. 208 is the same as 206, except that it is to be played and recited in all the harmonic minor keys.

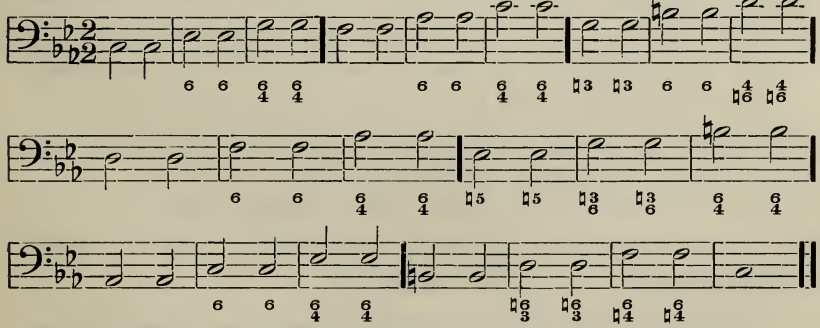
Exs. 206, 207, and 208 are to be kept in practice until the student knows all the chords in all the major, and two kinds of minor keys, readily playing or reciting upon call the chords in any one of the keys.

Ex. 206 written in the obsolete "figured bass" style would appear thus:



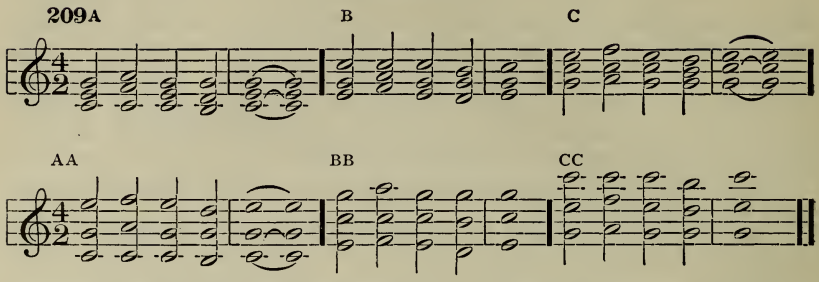
Ex. 207 would be "figured" in the same way, the only difference being in the signature, that of three flats (c minor).

Ex. 208 "figured" would appear thus:



The natural signs indicate the raised 7, needed to make the scale harmonic minor.

CADENCES



210. It will be noticed that Ex. 209 is written in six different forms: three in close harmony, and three in open harmony. It is an example of the connection of the principal chords in the key of C. The chords in the six divisions of the exercise are the same; tonic, sub-dominant, tonic, dominant, and lastly, tonic (1–4–1–5–1).

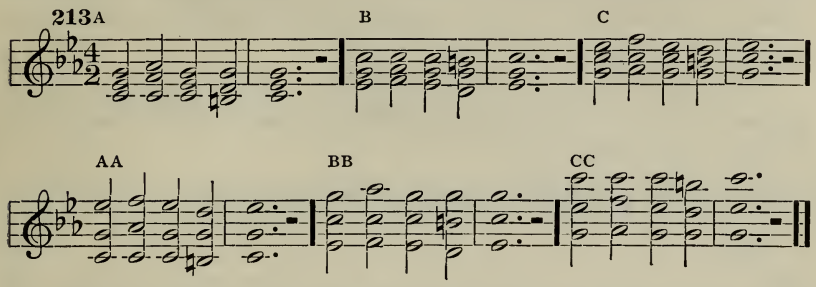
The first chord in each division is the C chord, and the second chord is the F chord (F–A–C); as the tone C is common to both chords (C–E–G and F–A–C), it is retained in the same part in the second chord as in the first (if C is the lowest tone in the first chord it remains the lowest tone in the second chord; if C is the middle tone in the first chord it remains the middle tone in the second chord; if C is the highest tone in the first chord it is retained as the highest tone in the second chord). The other tones of the first chord move to the nearest tones of the next chord, the E moving up to F, and the G moving up to A. This course of procedure is continued throughout the entire exercise.

211. Generally speaking, this is the most common way of connecting chords, the common tones or tone being retained, the other tones making the smallest possible skips.

212. Ex. 209 is an example of the **authentic cadence,** meaning *true close;* a succession of chords in this order, being in common use as the ending in many compositions.

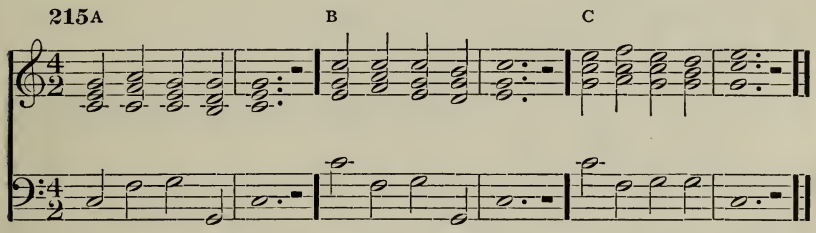
Ex. 209 is to be played in all the fifteen commonly used major keys (C♭, **C,** C♯, D♭, **D,** E♭, **E, F,** F♯, G♭, **G,** A♭, **A,** B♭, **B**), and each chord is to be analyzed,

giving the Root, the Third, the Fifth, the inversion, and naming the intervals in each form of the chords.



Ex. 213 is the same as 209, except that it is in the key of *c*. It is to be played in the fourteen commonly used minor keys, *c*, *c*♯, *d*, *d*♯, *e*♭, *f*, *f*♯, *g*, *g*♯, *a*♭, *a*♯, *b*♭ and *b*. The chords and intervals found throughout the exercise are to be studied in the same manner as in Ex. 209.

214. Ex. 214 is the same as 213, except that 7 of the scale is not to be raised, leaving the key normal minor. It is to be played in the fourteen normal minor keys, and is to be studied in the same manner as the two preceding exercises.



Ex. 215 resembles 209, only now a bass is added. The bass plays the Roots of the chords, except at the third chord, where it has the Fifth.

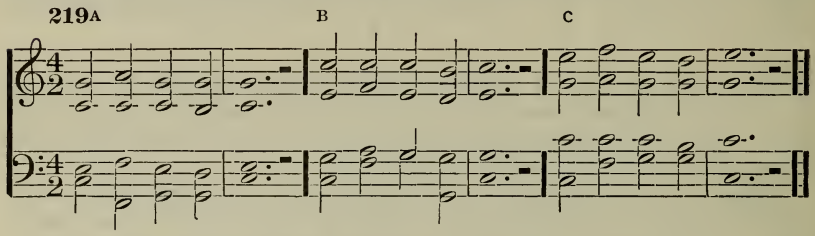
216. In the authentic cadence, when the dominant chord is preceded by the tonic chord, the latter occurring on the accent, the bass usually has the Fifth, forming the second inversion (six-four chord) of the tonic.

217. When a six-four chord (second inversion) occurs on an unaccented beat, or in a very rapid movement, it may be preceded and succeeded by any chord the composer chooses to use.

218. The measures marked "B" give the perfect authentic cadence, so called because the Root of the tonic chord, the **point of repose,** is heard in both the highest and lowest parts in the final chord.

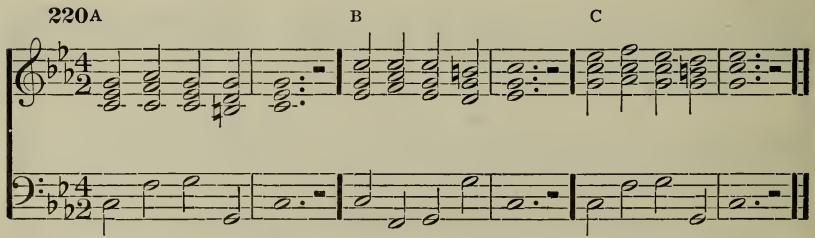
The other endings, while authentic, are not called perfect, because the Root of the tonic chord is *not* heard in the final chord in both soprano and bass.

Ex. 215 is to be played and written in all the major keys.

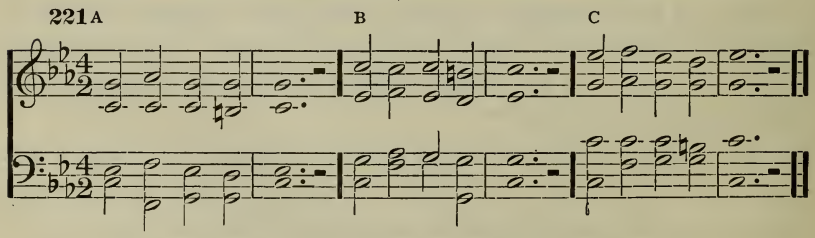


Ex. 219 differs from 215 slightly in that it is in open harmony.

From here on, all the exercises are to be played and written in all the major or minor keys, and all the chords are to be analyzed.



Ex. 220 differs from 215 in that it is in the harmonic minor key.

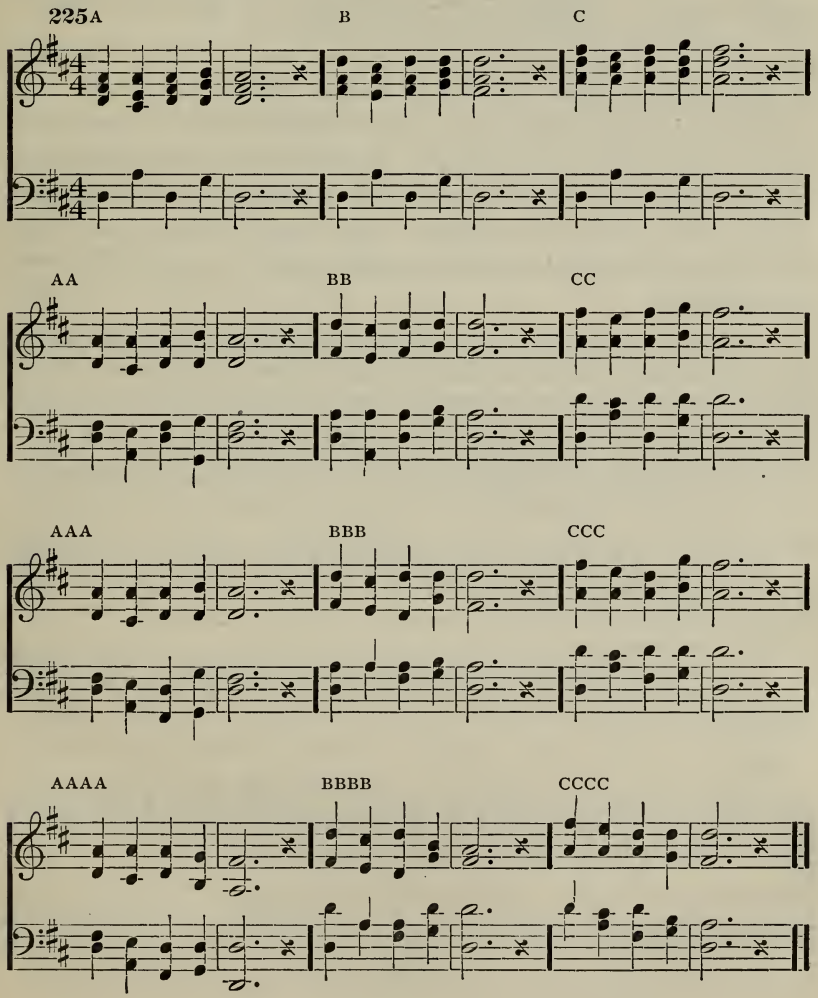


Ex. 221 is the same as 220, except that it is in open harmony.

222. Ex. 222 is the same as 220, except that it is in the normal minor key, i. e., the minor key without the raised 7.

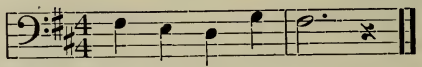
223. Ex. 223 is the same as 221, except that it is in the normal minor key, i, e., the minor key without the raised 7.

224. In Ex. 224 play the cadence chords, in all the forms, in this order: first in a major key; then in the normal minor key (tonic minor); then in the tonic harmonic minor key.



226. Ex. 225, in all its twelve forms, is an example of the connection of chords which form the **plagal cadence.**

227. In the plagal cadence the two final chords must be subdominant and tonic.

228. In the division marked "AAA" the tenor part has this melodic figure:  In the division marked "BBB" this same melodic figure occurs in the alto, and in the division marked "CCC" the soprano has the same figure.

229. In the divisions from "AAA" onward, on the third count of the measure, the first inversion of the tonic chord occurs (the 6th-chord). The inversion of a chord has no influence on the method of chord-connection, the common tones being retained, and the other parts making the smallest possible skips to tones of the succeeding chord.

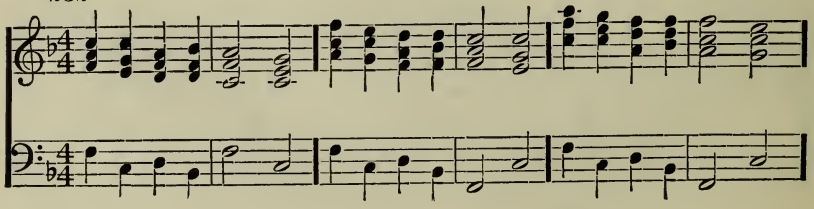
It should be noticed that the effect of the plagal cadence is much gentler and smoother than the authentic cadence, which is bold and assertive. Notice the difference in effect, according as the final chord ends with the Root, the Third or the Fifth for the highest note. The Root or the tonic as the highest note gives the effect of complete finish, while the endings with the Third or Fifth as the highest note suggest the effect of incompleteness, plaintiveness or questioning. All these endings are good; they express various shades of meaning.

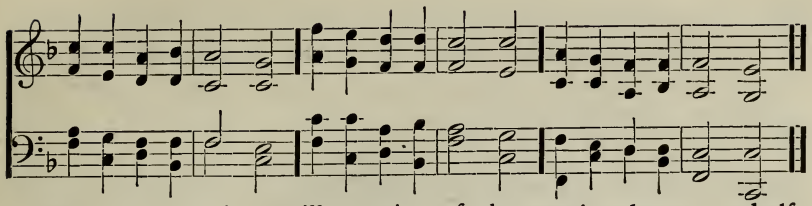
230. Ex. 230 is the same as 225, except that it is to be played in the normal minor keys (without the raised 7).

231. Ex. 231 is the same as 225, except that it is to be played in the harmonic minor keys.

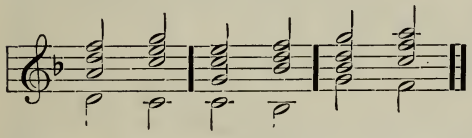
The student, in studying compositions, as well as in analysis work, should determine what kind of cadences are used at the ends of all parts of the composition.

232





233. Ex. 232 is an illustration of the **semi-cadence**, or **half-cadence**, a half-close or phrase-ending which stands in contrast with the authentic or plagal cadences, both of which are used for a full close. In the half-cadence the penultimate and last chords are usually the tonic and dominant. In Ex. 232 a subordinate chord, the sub-mediant, is used, and the exercise also shows the method of connecting chords which have no common tones. The C major chord (dominant), is followed by the D minor chord (sub-mediant), these two chords having no common tones. The progression of the lowest part from the C chord to the D chord is up, so the other parts should move in a contrary direction, downwards. If the bass part were to move down in a chord progression, the other parts would move in the contrary direction, up. The accompanying example shows three cases of this kind of chord-connection.



In Ex. 232, the chord on the third count of the first measure and the chord on the fourth count have two common tones; and these common tones are retained in the same voice-parts throughout the various forms of the exercise.

234. While these cadence-examples show the ordinary methods of connecting chords, (with one common tone, with two common tones, or with no common tone), it should be remembered that there are no inflexible rules or laws governing chord-connection.

235. A chord of any kind may be preceded by any other chord, and followed by any other chord, provided the chord-succession sounds well, or expresses the phase of emotion or the mood-picture which the composer desires to express.

This gives an almost unlimited number of possibilities; and the

only way to discover these possibilities is by a very careful analysis of the chord-successions to be found in the classical, romantic, and modern compositions (chiefly modern), and by actual experiments at the piano key-board.

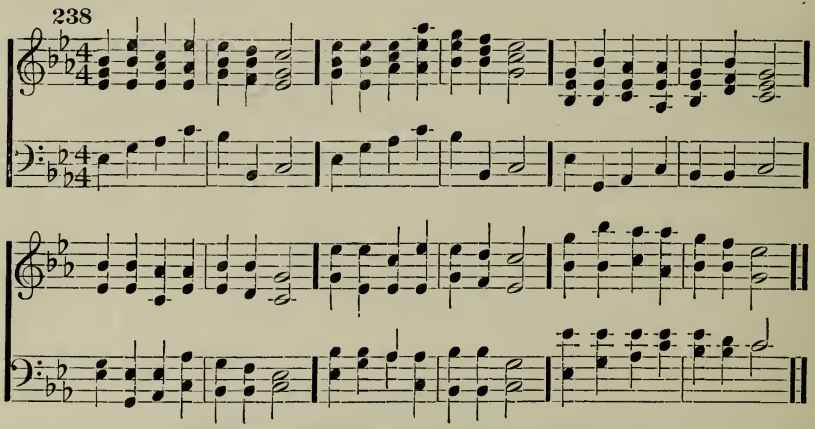
For the student who desires to compose, the author would recommend that he make a harmonic analysis of the works of Bach, Beethoven, Chopin, Grieg, Brahms, Wagner, St.-Saëns, Tschaikowski, Schumann, Schubert, and Richard Strauss. (See Appendix II.)

236. Ex. 236 is the same as 232, except that it is to be played and written in the normal minor keys.[1]

237. Ex. 237 is the same as 232, except that it is to be played and written in the harmonic minor keys.[1]

As these cadence-exercises are being played, the student should name each chord, its Root, upon what degree of the scale it appears, in which inversion it appears, and whether it be in close or open harmony.

238



[1] In Ex. 237 will be found the skip of an augmented Second. This occurs in numerous other exercises. It has been the custom for theorists to forbid the use of this interval, but their interdiction seems to the author useless. The interval may be found in the works of all the great composers, in compositions for piano, for chorus, for orchestra, for solo instruments, and for the solo voice; and the works of composers are the final arbiters on any disputed points. (See 124.) Goodrich tersely states the case thus in "Analytical Harmony," page 76: "The author regrets that this interval (augmented Second) has been forbidden by theorists, for, if it is incorrect, then the scale (harmonic minor) must be incorrect. Nothing but a spirit of mechanical and anti-artistic pedantry could have sought to interdict an interval so necessary to composition, and so characteristic of our modern minor scale."

The absurd prohibitions of theorists have been almost entirely discarded in the latest writings, yet two relics seem to linger with us still. The augmented Second is one, while the consecutive Fifth is another. Consecutive Fifths are employed by innumerable composers, and are not, in themselves, incorrect. See Grieg's Op. 35 and Op. 22; Rubinstein's "Bride of Cashmere" from "Feramors"; MacDowell's "Sea Pieces," in "A. D. 1620," and "Starlight." A large list might be given.

239. Ex. 238 is an example of the **Deceptive Cadence.** The six-four chord is heard on the accent, followed by the dominant triad on the same bass. The ear then naturally expects the tonic chord, forming the Authentic Cadence, but instead, the chord on 6 (sub-mediant) is heard, the effect being "deceptive;" hence the name, **Deceptive Cadence.** This cadence is also called the **Surprise,** and sometimes the **False** Cadence. In Ex. 238 the first inversion of the tonic and the sub-dominant chords is used, as well as the second inversion of the tonic chord.

240. Ex. 240 is the same as 238, except that it is to be played in the normal minor keys.

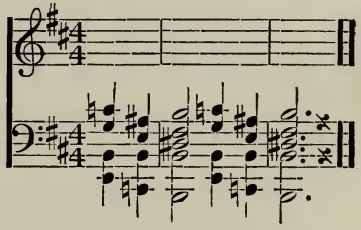
241. Ex. 241 is the same as 238, except that it is to be played and written in the harmonic minor keys.

In these cadence-exercises it will be observed that the six-four chords used are the second inversion of the tonic chord.

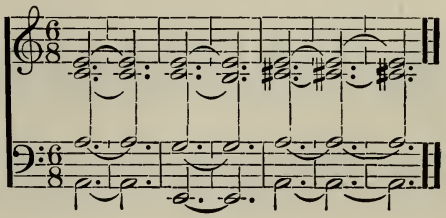
From this point on, the student should write numerous hymns in four voice-parts, using all the simple chords in the key and these various cadences, in an attempt to express the meaning of the words used as text, making the rhythm of the music fit the rhythm of the text, making the musical cadences fit the ends of the text-lines, etc. Simple modulations, by means of the raised 4, the lowered 7, and the raised 5 (as in Exs. 17, 18, 36, 37, 38, 39) may be attempted in order to avoid monotony of tonality.

The following examples of cadences, somewhat different from the preceding exercises, are from a few compositions.

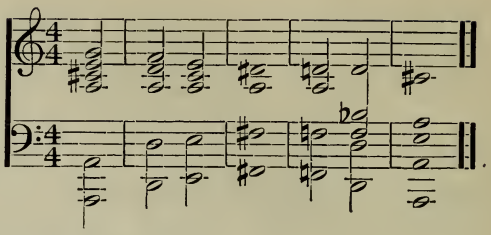
Ballade in *b* minor, Opus 79, No. 1, the final chords, by Brahms.



From the Quintette in *a* minor, Opus 14, for piano, two violins, viola, and cello; by St.-Saëns. The final chords of the third movement, Scherzo, the movement being in the key of *a* normal minor.

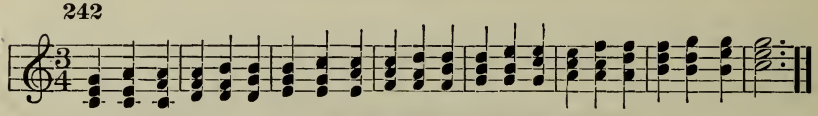


St.-Saëns, Quintette in *a* minor, Opus 14, the final chords of the first movement. (See Appendix I, Section C, for more striking cadences.)



EXERCISES IN CHORDS

242



Ex. 242 uses all the three-toned chords in the key of **C**, each pair of chords having two common tones; all the chords are used in the three close harmony forms, i. e., as a fundamental chord, as first and as second inversion form.

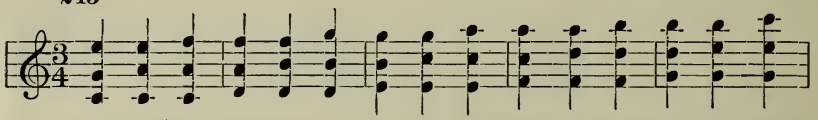
All the exercises are to be played in all keys.

Ex. 242 should be played backwards in all keys.

243. Play Ex. 242 in all major, normal minor, and harmonic minor keys, adding in the left hand, or bass staff, (in writing) the **Root** of each chord.

244. Play Ex. 242 **backwards** in all the major, minor, and harmonic minor keys, adding the Root of each chord in the bass or left hand part.

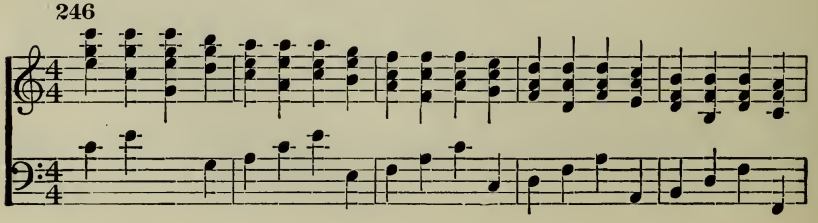
245

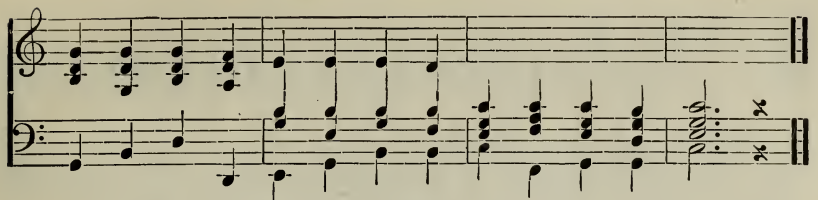


Ex. 245 is the same as 242, except that it is in open harmony. It is to be played in all the major, normal minor, and harmonic minor keys, forwards and backwards.

If the student has played all the chord-exercises up to this point, he will be enabled to play all the subsequent exercises at a rapid tempo, and will be able to improvise simple chord-progressions at pleasure.

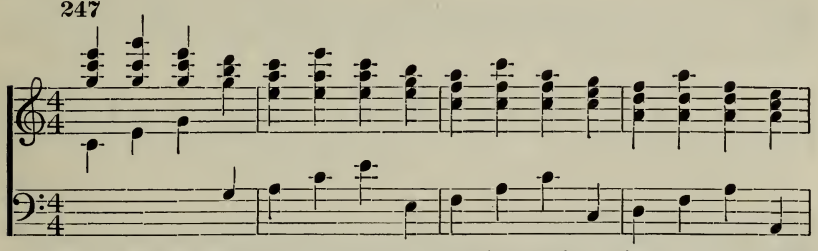
246





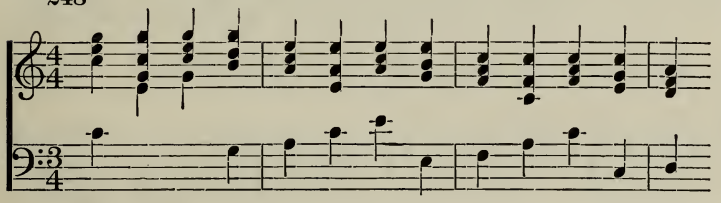
Ex. 246 uses all the chords in the key of C in a different manner from the several preceding exercises. Again all the chords appear in the three forms, as fundamental, in first inversion, and in second inversion. Exs. 242 and 246 are to be compared. Ex. 246 is to be played in the major, the normal minor, and the harmonic minor keys.

247



Ex. 247 is the same as 246, except that the forms of the chords in the right-hand part are different. It is to be played in the major and the two kinds of minor keys, each time finding its conclusion at the eighth measure.

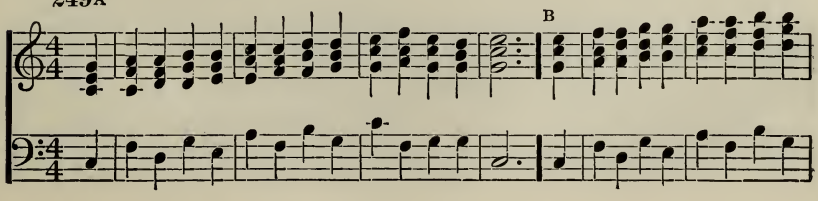
248

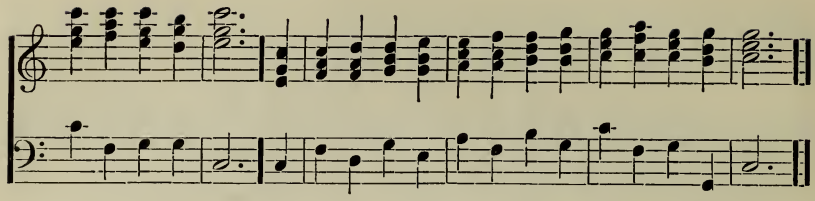


To be finished.

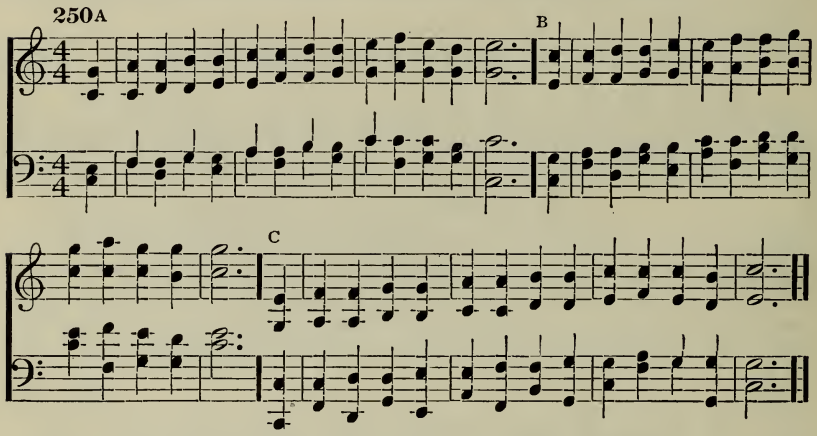
Ex. 248 is the same as Exs. 246 and 247, except that the forms of the chords in the right-hand part are different. It is to be played in all the major and the two kinds of minor keys.

249A

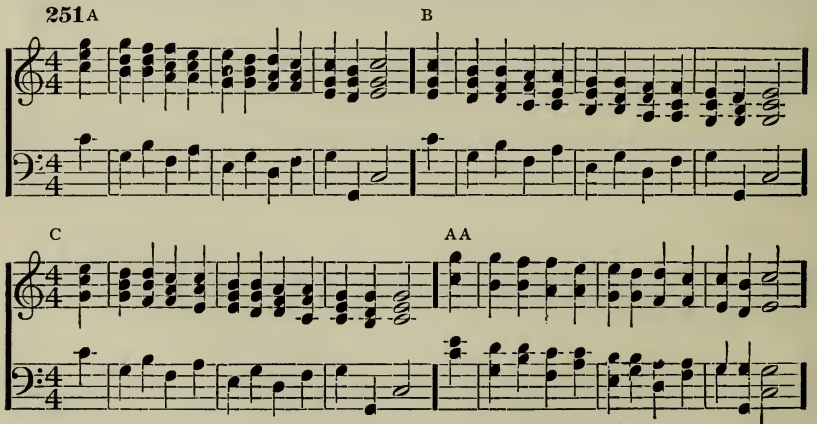


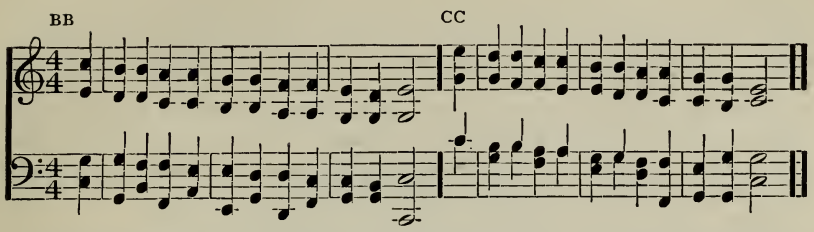


Ex. 249 uses all the chords in the key of **C** in a different arrangement. The three forms of the exercise show different forms of the chords in the right-hand part. The exercise is to be played in all the keys, major and minor.



Ex. 250 is the same as 249, except that it is in open harmony.





Ex. 251 shows all the chords in the key of C, in a different progression. The six forms of the exercise show the different forms of the chords, three forms in close harmony, and three in open.

252. Compare Ex. 251 with 249 and 250. In 251 the tendency is upward, while in 249 and 250 it is downward.

In Chapter X will be found a full treatment of the augmented and diminished common chords, where the possible progressions are enumerated and explained.

In Chapter XIII the possible progressions of major and minor chords are indicated and explained, differing from the progressions within a definite key-relationship.

In Appendix III will be found still further exercises in chord-progression.

253. As was stated in the early part of this chapter, there are no inflexible rules governing the use of chords, yet, as a general thing, the following points are observed:

254. The Root of a diminished chord is seldom doubled, but when doubled, one Root progresses upward, the other downward.

255. All the notes of a chord should not move up or down the same distance in the same direction, unless justified by a particular desire for a peculiar effect.[1]

By this time Chapter V, Ear-Training, should be completed, and the harmonic analysis of a large number of hymn-tunes made. (See Appendix II.)

If this has been done, the student should now begin the harmonic analysis of the "Songs Without Words," by Mendelssohn, naming every known chord he sees, stating upon what degree it is built, whether it is major, minor, augmented or diminished. He should also make an analysis of the intervals, and study the method of chord-connection used by the composer.

Also notice the simpler modulations, as: to the dominant key by means of the raised 4; to the sub-dominant key by means of the lowered 7; to the relative minor key by means of the raised 5; and to the tonic minor key by means of the lowered 3 and 6.

[1] See Grieg's Op. 35. See 237, footnote.

256. All the preceding exercises should be used in ear-training classes, and the student required to sing the **point of repose**, the **quality tone**, and the **insistent tone** in each major and minor chord. The instructor should stop at any chord in the exercise, requiring the student to determine upon what degree of the scale that particular chord is built. Require the student to tell whether a chord is inverted or not, and in which inversion and what tone is at the top. When a new exercise is introduced, play each pair of chords slowly, the student to determine which tone of the first chord moves, how far, and into what tone it moves. Also let him determine which tone or tones stand still.

Persistent practice of this kind should be continued until the student can follow, by hearing alone, a simple progression of chords as easily as though it were written, telling just what has taken place, even going to the piano and reproducing the succession. The ability thus acquired will give one an intelligent appreciation of music; will increase his musical feeling; will be of inestimable value in interpretation; and will produce a knowledge that nothing can take away, unless it be deafness—and even then the development of intelligence will remain.

DISTINGUISHING THREE-TONED CHORDS.

(Chords are named by Roman Numerals of their Roots; see 655.)

In a major key three of the common chords are major, three are minor, and one is diminished. If a major chord is heard, it must be I, IV, or V, for major chords are found only on those degrees; if the major chord contains the tonic tone, it must be either I or IV, and if the tonic is also the Root of the chord, the chord will be I; but if the tonic is not the Root, the chord must be IV. If the chord is major, and does not contain the tonic, it must be V.

If a minor chord within the major key is heard, it must be II, III, or VI, for minor chords occur only on those degrees. If the tonic is heard in such minor chords, the chord must be VI; if such minor chord contains the tone above the tonic, the chord must be on II; and if it contains the tone below the tonic, the chord must be on III. If a diminished chord within the major key is heard, it must be on VII. Each of these conditions excludes all the others.

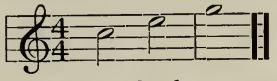
In the harmonic minor key the chords on I and IV are minor. The chord I contains the tonic, such tone being the Root of the chord; the chord IV contains the tonic, but it is not the Root of that chord. V and VI, in harmonic minor, are major chords, and V does not contain the tonic tone, while VI does.

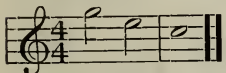
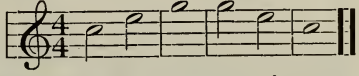
If, therefore, a major chord containing the tonic is heard in harmonic minor, such chord must be on VI; if a major chord in harmonic minor is heard that does not contain the tonic, such chord must be V; if a minor chord is heard in harmonic minor that has as its Root, or point of repose, the tonic tone, such chord must be on I; but if a minor chord is heard in harmonic minor whose Root is not the tonic tone, such chord must be on IV. If a diminished chord is heard in harmonic minor, such chord must be on either II or VII; if it does not contain the tone below the tonic, it must be II; but if it does contain the tone below the tonic, it must be VII. If an augmented chord is heard in harmonic minor it must be III. Each of these conditions excludes all the others.

CHAPTER VII

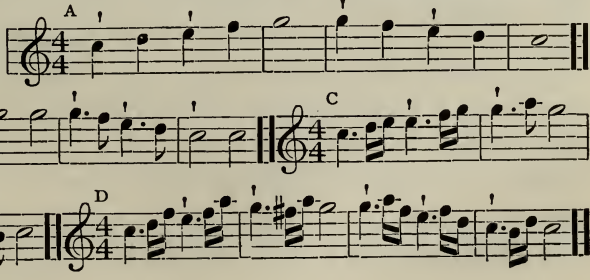
MELODY-FORMATION

257. Every melody, however simple or complex, is built upon and suggests a harmonic basis. Every melody, however simple or complex, is based upon simple melodic figures of half a measure (or even less), or a whole measure (sometimes more).

258. Let us take some simple figure,  and see what can be made out of it. The harmonic basis is purely the C-major chord, and the construction of the figure is simple in the extreme. As this melodic idea ends on 5 of the scale (the Insistent Tone), it is asking a question, to which we must find an answer. Obviously, the answer should end on the tonic note (the Point of Repose), therefore it naturally follows that the simplest answer will be obtained by playing the original figure backwards; thus:

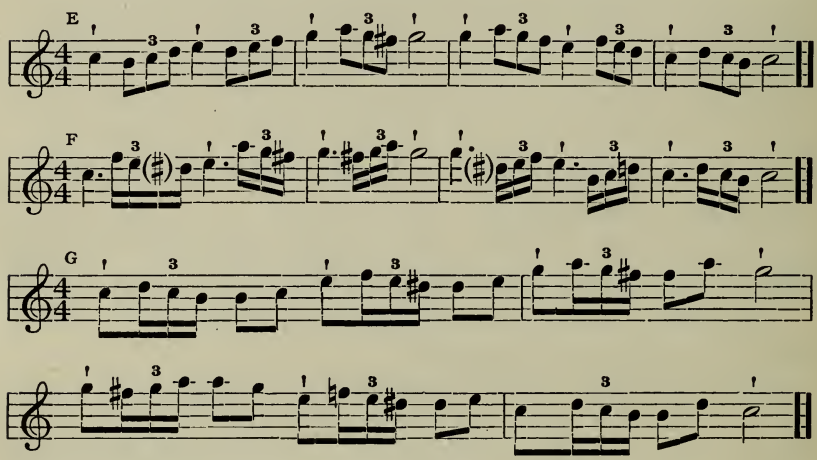
 Question and Answer complete. 

259. Other terms for the Question and Answer are Antecedent and Consequent, respectively.

260. This simple melodic figure may be embellished in many different ways, as 

It will be seen that our original melody has been enriched by each one of these examples of embellishment. The harmony tones of the original figure are indicated in these variations by a small dash over the harmonic note. In "A," a simple passing-tone[1] occurs between the harmony-tones C–E and E–G. In "B" the passing-tones are the same as in "A," but the rhythm is made more interesting. In "C" the rhythm is again altered, and the harmony-tones are **anticipated** by the sixteenth note which occurs before them. In "D" the harmony-tones E and G are accompanied by the notes below and above, while in the answer the harmony tones G, E, and C are accompanied or embellished by the notes above and below each.

261. Our simple tune may be ornamented further, as follows:



Too much ornamentation will spoil a good tune; yet, on the other hand, a poor tune cannot be made good by any amount of ornamentation.

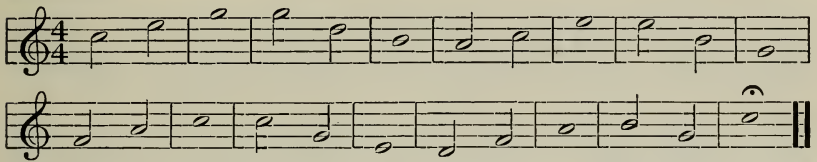
262. A melody, to be good, must have a musical and good harmonic foundation, and, while full of variety, must yet have complete unity; **unity in variety, and variety in unity.**

[1]See 543–549.

263. Each Question together with its Answer, each Antecedent together with its Consequent, makes a **phrase** in two **sections.**

A course in form-analysis should accompany the study of musical material. See Appendix II.

264. Another method of building up a melody is by **harmonic sequence.**



Measures 1 and 2 form the C major chord. (Tonic harmony.)

Measures 3 and 4 form the G major chord. (Dominant harmony.)

Measures 5 and 6 form the A minor chord. (Sub-mediant harmony.)

Measures 7 and 8 form the E minor chord. (Mediant harmony.)

Measures 9 and 10 form the F major chord. (Sub-dominant harmony.)

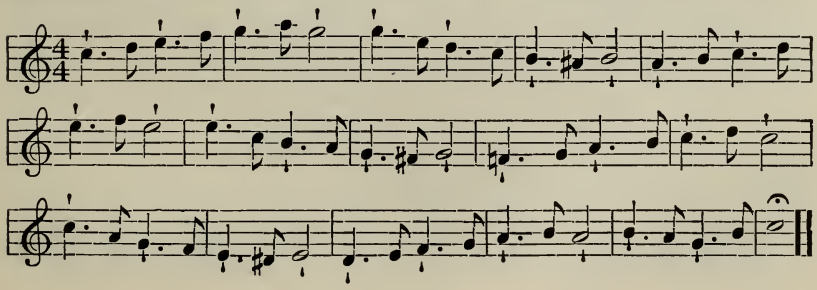
Measures 11 and 12 form the tonic chord. (Tonic harmony.)

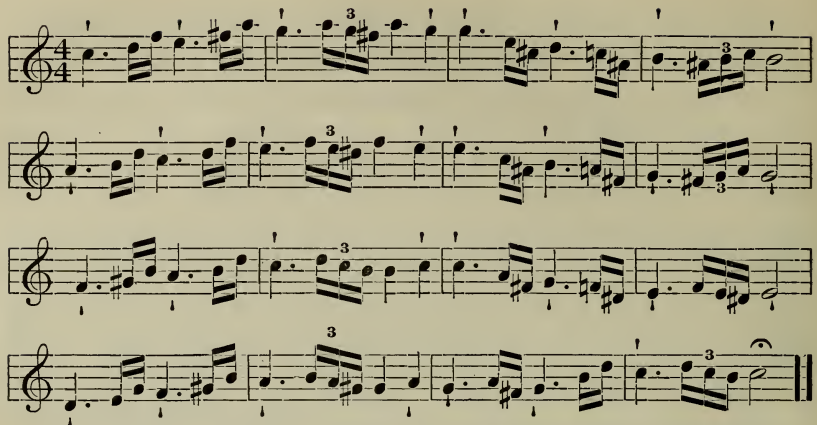
Measures 13 and 14 form the D minor chord. (Super-tonic harmony.)

Measure 15 forms the G major chord. (Dominant harmony.)

Measure 16 is the tonic note C. (The **point of repose.**)

265. An elaboration or ornamentation of this outline may be made in various ways; two are appended for comparison.





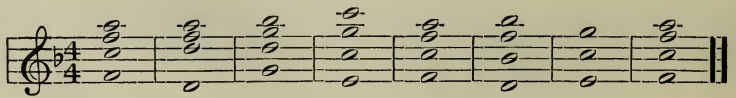
The student should try to make as many changes in this melodic outline as possible, though without departing from the harmonic basis.

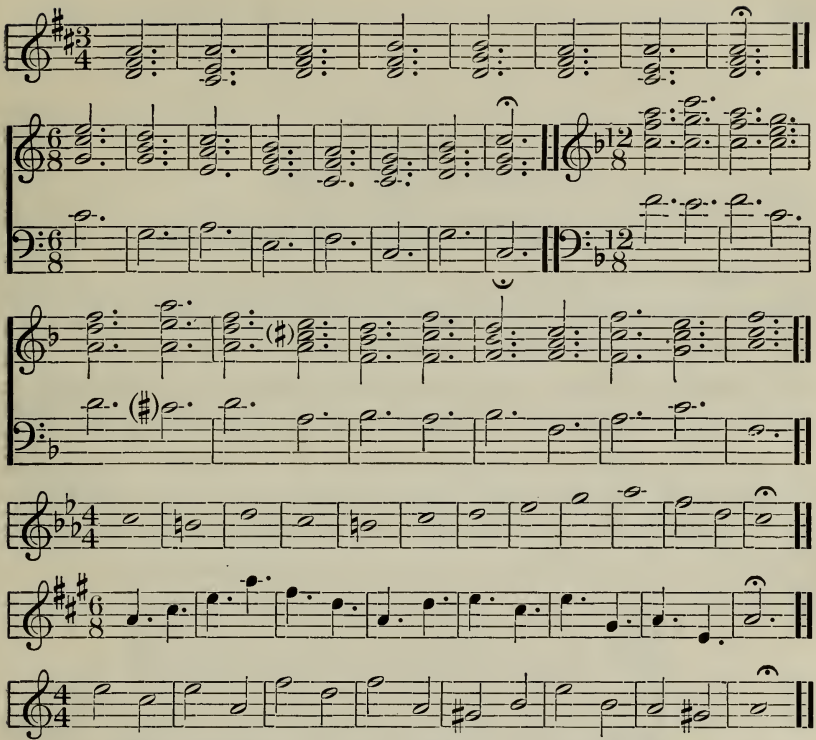
266. When a harmonic tone has a passing-tone or a suspension below it, that passing-tone or suspension is usually written a half-step below the principal harmonic tone. (See 543–549.) The passing-tone (or suspension above the harmonic note) is usually written in accordance with the key. In a very slow movement, the passing tones or suspensions accompanying the harmonic tone are usually written in accordance with the key, no matter whether above or below the harmonic note. For a particular effect the composer may use any kind of melodic progression he pleases.

267. In this matter of principles of melody-formation, as in all other particulars of musical theory, the only real way to study the subject is by an analysis of the melodies of the great composers, noticing the harmonic basis, the passing-tones and suspensions, the embellishments and ornamentation of all kinds.

The author would recommend an analysis of the melodies in the Beethoven Piano Sonatas, particularly the slow movements.

A few simple harmonic schemes are given upon which the student should build as many different melodies as he can.





The student may make as many changes in the rhythm and add as many embellishments as he pleases, but the harmonic outlines must remain intact.

The passing tones and simple suspensions are explained fully in Chapters V and XIII.

Take Exs. 209 to 250, in Chapter VI, making melodies upon the harmonic foundations there given, using particularly the cadence exercises, in all the prescribed forms. These melodies should be as symmetrical as possible, with the harmonic outline intact always. The rhythm may be changed; but the symmetry must be of such degree that the melody is smooth and flowing, showing a mutual relation between Question and Answer, Antecedent and Consequent.

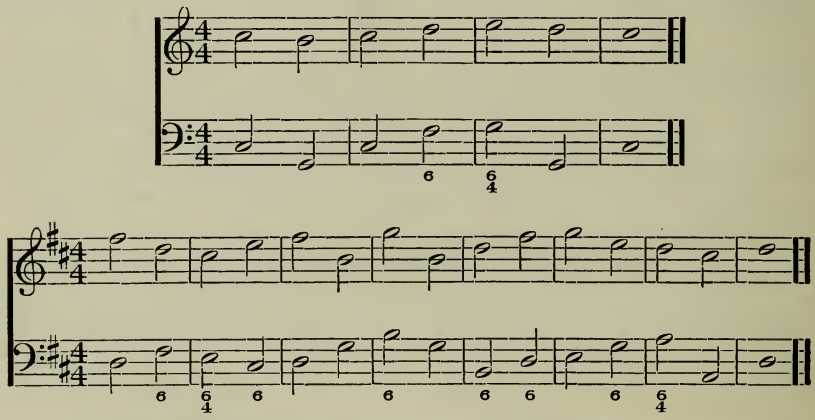
268. It is impossible to lay down any rules or formulæ by which melodies may be made; but by constant effort in melody-making, and thorough analysis of the melodies in compositions, the art may be acquired.

CHAPTER VIII

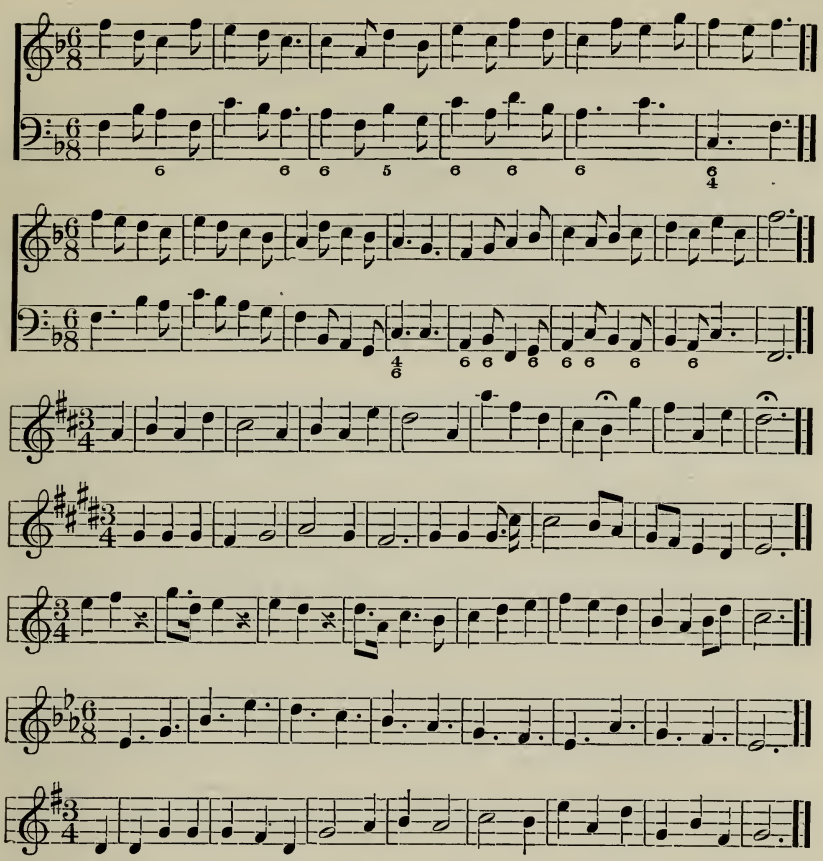
THE HARMONIZATION OF MELODIES[1]

269. It is impossible to lay down rules to govern the harmonization of melodies. Intelligent study of this branch of harmony involves careful observation of masterpieces of composition. Such study must be based upon a good knowledge of the interval-exercises and chord-exercises contained in the former chapters.

270. A number of melodies, simple as to harmonic basis, will be given, the chords which may accompany them being indicated in a few cases (by "figured basses"). When the student is familiar with these, he is to continue, making his own harmonies.



[1] The trend of modern music makes the harmonization of melodies an ungrateful subject, for it seems that the "melodization of harmony" is a spontaneous growth of modern composition. A melody by Mozart, Haydn, or even Beethoven, may be harmonized by a student with a harmonic result closely akin to that attained by the composer; but the harmonization of a melody by Wagner, Strauss, Grieg, Franck, MacDowell, or other modern composers, would have little, if any, appreciable relation to the harmonization as seen in these composers' works. Many phases of this "melodization of harmony" may be seen in the present treatise.



The practice of writing hymns should be continued, and each melody harmonized in several ways. The student should also write little waltzes, marches, etc., and harmonize them as all ordinary waltzes and marches are harmonized for the piano. Also numerous songs, with simple piano accompaniments, should be written.

271. Naturally, the student's own creative work will at first be more or less crude; but he should be encouraged always, as it is only through many efforts that any measure of success can be obtained. The instructor should always be on the alert for a spark of originality, and if a student uses some chord, or some pro-

gression not yet treated, let such experiments be encouraged and so explained that he may have an intelligent idea of what his natural though untrained musical feeling has enabled him to use.

272. Always remember that the student should not be told what **not** to do; he should rather be encouraged by all possible means to go on and **do.**

273. The things a composer may **not do** are exceedingly rare, and very hard to define; but the things he may and can **do** are unlimited in number; therefore the time should be given to the **doing.**

274. Remember that the analytical work on intervals, chords, melody, and form, must be continued throughout the entire course. Do not allow a week to pass without making much use of this feature of the work. (See Appendix II.)

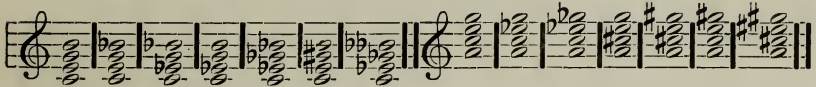
275. If one wishes to learn the English language, he needs must study the words and their usage, converse in it, hear others speak it, and finally must **think** in it. So it is with the language of music; we must play or sing it, hear others play it, listen to it with great intentness and concentration, analyze it, and **think** in musical sounds, until it becomes for us a live language, full of power, intellectual and emotional, capable of conveying and expressing great thoughts. Then our musical efforts as players or composers will have value, and not be merely mechanical.

CHAPTER IX

CHORDS OF THE SEVENTH

276. Any kind of a triad with any kind of a Seventh (from the Root of that triad) added is a 7th-chord.

Thus 7th-chords on C and on A appear :



277. Any combination of four different tones which can be reduced and rearranged in Thirds, one above the other, is a 7th-chord of some kind. Thus, C–E–F–A is a 7th-chord on F (F–A–C–E), A–D–F–B is a 7th-chord on B (B–D–F–A), D–G–B–E is a 7th-chord on E (E–G–B–D), C–G–A–E is a 7th-chord on A (A–C–E–G), etc.

278. Any combination of four tones which cannot be reduced and rearranged in Thirds, one above another, is not a simple chord formation.

279. The lowest note of a 7th-chord, when the chord is arranged in Thirds, is the Root of that chord ; and the chord is named a 7th-chord on that note.

280. An examination of the preceding 7th-chords on C and on A will show that there are seven kinds of 7th-chords in ordinary use ; and the analysis of them shows that they are built up in this manner :

A major triad, plus a major Seventh.
A major triad, plus a minor Seventh.
A minor triad, plus a minor Seventh.
A minor triad, plus a major Seventh.

A diminished triad, plus a minor Seventh.

A diminished triad, plus a diminished Seventh.

An augmented triad, plus a major Seventh.

The student should now build all these kinds of 7th-chords upon each key at the piano, (eighty-four 7th-chords in all), care being exercised to see that the correct spelling of each chord is known.

281. The 7th-chords are inverted in the same manner as the triads. If the Root be the lowest note, the chord is not inverted, regardless of the positions of the other notes.

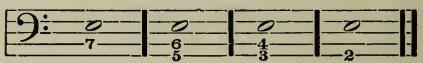
If the Third of the chord is the lowest note, the chord is in its first inversion, regardless of the positions of the other notes.

If the Fifth be the lowest note, the chord is in its second inversion, regardless of the positions of the other notes.

If the Seventh of the chord be the lowest note, the chord is in its third inversion, regardless of the positions of the other notes.

The student should now play and recite all the various 7th-chords in their fundamental forms, in first, second, and third inversions. Thus the 7th-chord on C (C–E–G–B), would be recited C–E–G–B; E–G–B–C; G–B–C–E; B–C–E–G; etc. The knowledge of these 7th-chords should be put into practical use at once, in analysis, the student naming every 7th-chord he meets, upon what degree of the scale it is built, and in which inversion it appears.

The method of "figuring" the 7th-chords is as follows:



The 7th-chord on E, as indicated in the first measure, is naturally E–G–B–D. In the second measure the figures 5 and 6 above E give B–C, the Seventh and Root of the chord, the full chord being E–G–B–C, the first inversion of the 7th-chord on C. In the third measure the figures 3 and 4 over E give G and A, the Seventh and Root of a 7th-chord, the entire chord being E–G–A–C, the second inversion of the 7th-chord on A. In the fourth measure the figure 2 gives the Root of the 7th-chord, F being the Root and E the Seventh, the entire chord being E–F–A–C, the third inversion of the 7th-chord on F.

The terms "Seventh-Chord," "Five-Six-Chord," "Three-Four-Chord," and "Two-Chord" are in common use, and signify: a 7th-chord with the Root in the lowest part (Seventh-Chord); a 7th-chord with the Third in the lowest part (Five-Six-Chord); a 7th-chord with the Fifth in the lowest part (Three-Four-Chord); and a 7th-chord with the Seventh in the lowest part (Two-Chord). It matters not what kind of a 7th-chord may be used and inverted, the naming remains the same.

282. The most important of these 7th-chords are the one built of a major triad plus a minor Seventh; and the one built of a diminished triad plus a diminished Seventh.

The first of these (major triad and minor Seventh) is called a **dominant 7th-chord.**

The second of these (diminished triad plus a diminished Seventh) is called a **diminished 7th-chord.**

THE DOMINANT 7TH-CHORD

283. As its name implies, the dominant 7th-chord is usually built upon the dominant note (5) of the major and harmonic minor scales; that is, the only key in which the dominant 7th-chord on C (C–E–G–B♭) may be found is **F** or *f* harmonic minor; etc.

284. The dominant 7th-chord contains three of the important tones of a key; thus G–B–D–F is the dominant 7th-chord in the key of **C** or in *c* harmonic minor; and G is the dominant note (the **insistent tone**) of those two keys, which note cannot be changed without suggesting another key; B in the 7th-chord is the leading-tone to the tonic C, and that tone cannot be changed without suggesting another key; and that dominant 7th-chord also contains F, another tone which cannot be altered without suggesting another key.

Thus the dominant 7th-chord contains the **characteristic tones** (4–7) and the **insistent tone** (5) of a major and a harmonic minor key on the same tonic; and these tones all point strongly and unmistakably to the **point of repose chord,** the tonic chord.

285. As the dominant of a key is the **insistent tone,** so the dominant chord of a key is the **insistent chord** of that key, while the dominant 7th-chord is unmistakably the **insistent chord** of that key.

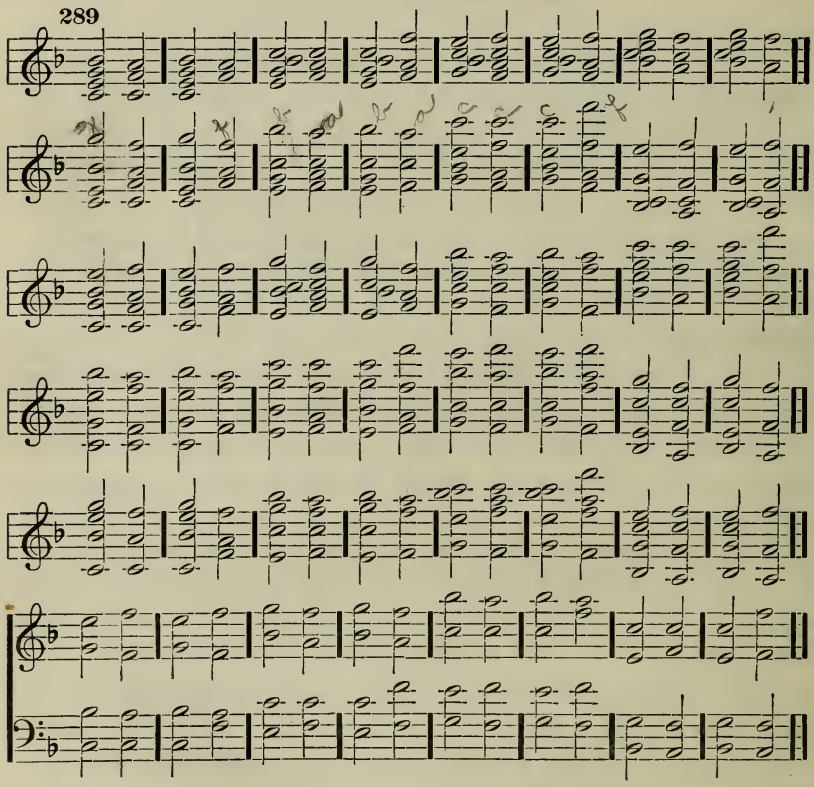
286. As the tonic note is the **point of repose for the key, so** the tonic chord is the **point of repose chord.**

(Review the chapters on scales, and see the logical outcome of the presentations made there.)

287. The dominant 7th-chord shows the intimate relation between a major and a minor key having the same tonic (tonic major and minor keys). See 33 ff.

288. As the dominant 7th-chord may be built upon 5 of a major or a harmonic minor key, it is self-evident that it can resolve into either the tonic major or the tonic minor chord.

289



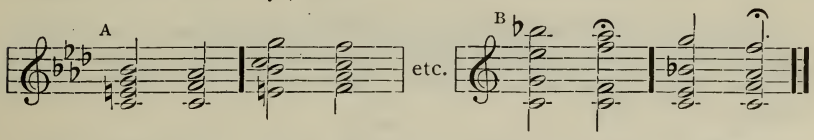
290. Ex. 289 consists of the dominant 7th-chord on C, in twenty-four simple forms, with the natural resolution into the tonic chord on F. Six of these forms of the dominant 7th-chord have

the Root in the bass ; six have the Third, six have the Fifth, and six have the Seventh.

Ex. 289 is to be worked out and played in all the major keys.

291. The Fifth of the dominant 7th-chord, as well as the Fifth of a major common chord, may be left out at pleasure.

The student is to play the twenty-four forms of the dominant 7th-chord, as seen in 289, resolving each to the nearest form of the tonic minor chord, in all the harmonic minor keys, as at A.



292. Each one of the important notes in the dominant 7th-chord (Root, Third and Seventh) has a definite natural tendency to resolve ; the Root, being the **insistent tone** of the key, prefers skipping up a Fourth or down a Fifth to the Root of the tonic chord (the **point of repose** of the key).

The Third of the chord, being the leading-tone of the key, pushes on up to the tonic, the **point of repose.**

The Seventh of the chord pushes down to the Third of the tonic chord, the **quality tone** of the tonic chord.

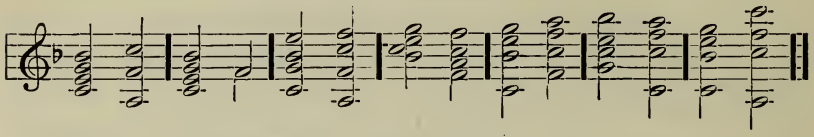
As the Root of the dominant 7th-chord is the Fifth of the tonic chord, being the common tone, it is frequently retained in the same part. But if it occurs in the bass it generally resolves naturally to the tonic note ; otherwise the resolution would result in a 6–4 chord, which demands another chord to succeed it, and no satisfactory ending would result, as at B above.

293. The Fifth of the dominant 7th-chord, being of less importance than the other tones, may move up or down a scale-degree in the resolution. If it moves up it will progress to the Third of the tonic chord ; and if it moves down, it will progress to the Root of the tonic chord.

Now carefully examine Ex. 289 and remark how each tone resolves.

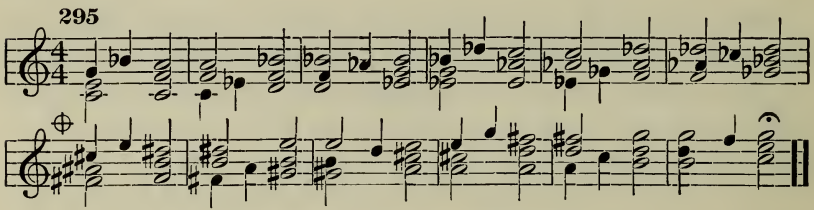
294. While each tone in the dominant 7th-chord has a natural

tendency in resolution, as has been explained, yet the chord may be used with great freedom by the composer, causing any tone to resolve differently in any way that meets his needs for expression; as, for example:



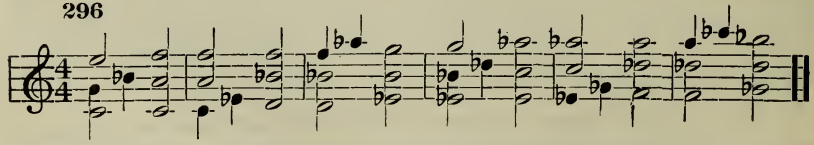
Although these dominant 7th-chords resolve to the tonic chord, all the tones within the dominant-7th do not resolve as their tendency would indicate. In spite of this incomplete resolution, the effects of the progressions are satisfactory.

295



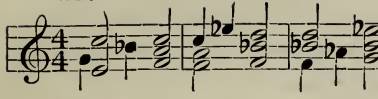
Ex. 295 uses all the dominant 7th-chords in logical order. The exercise begins with the major chord on C, then the Fifth of that chord moves up to the tone which will form a dominant 7th-chord on C; in turn this dominant 7th-chord resolves normally (the Root being retained as the common tone) to the major chord on F. The Fifth of this F major chord moves up to form a dominant 7th on F, and this dominant 7th resolves normally to the B♭ major chord, etc., this same kind of progression continuing until the original C major chord is again reached. At ⊕ the enharmonic change is needed. The student should become so familiar with 295 that he can begin at any major chord in the exercise and carry out the succession until he reaches the chord upon which he began. From this point on all the exercises with dominant 7th-chords are to be completed by the student, playing them at the piano, and writing them in all the forms.

296

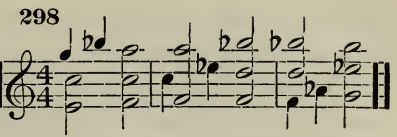


Ex. 296 is the same as 295, except that it is in open harmony.

297



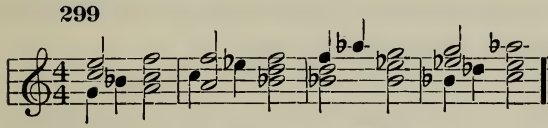
298



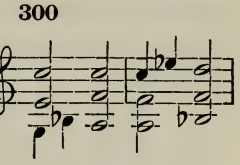
Ex. 297 is the same as 295, except that it begins with the first inversion of the C major chord, causing all the succeeding chords to occur in a different form from that in 295.

Ex. 298 is the same as 297, except that it is in open harmony.

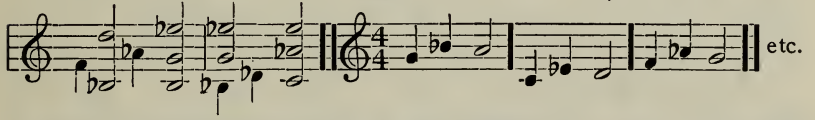
299



300



300A



Ex. 299 is the same as 295, except that the first chord begins in the second inversion, necessitating different forms of the succeeding chords.

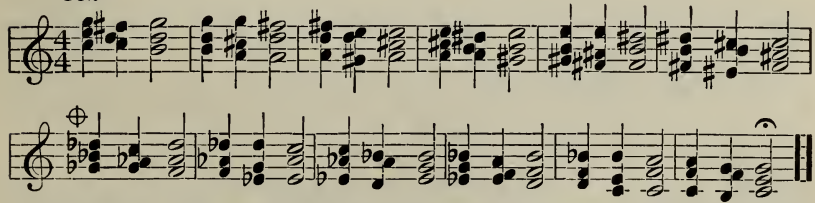
Ex. 300 is the same as 299, except that it is in the open harmony forms.

It should be noticed in the preceding six exercises that the little melodic figure (300A) is heard in one voice, then in another, and still again in another.

301. These progressions of 7th-chords, with their resolutions, give us a series of modulations around the Circle of Keys to the left.

Compare these six exercises with Exs. 146, 147, 156, 157, 158, 159, 172, 173, 174, 175, 183, 184, 185.

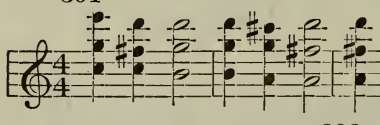
302



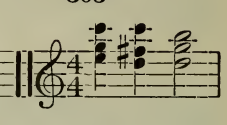
303. Ex. 302 is another example of simple modulations by means of the dominant 7th-chord. The C major chord is first; then the Third and Fifth move down (the Third a whole-step, the Fifth a half-step), forming the dominant 7th on D (with the Fifth

left out), which belongs to the key of **G**; then this dominant 7th-chord resolves normally to the G chord. The Third and Fifth — in different voices — now move down the same distances as before, forming the dominant 7th-chord on A (with Fifth omitted), in the key of **D**; then the dominant 7th resolves normally to the D chord. Next the Third and Fifth of this D chord, again in different voices, move down as before, etc., until the original chord is reached. The series of modulations is now around the Circle of Keys to the right, through the dominant keys.

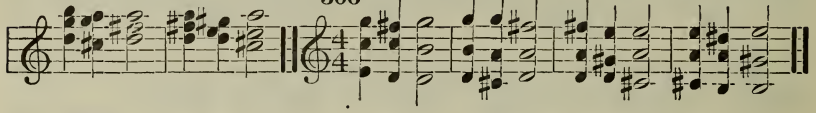
304



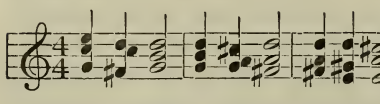
305



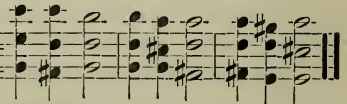
306



307



308



Ex. 304 differs from 302 in being in open harmony.

Ex. 305 is the same as 302, except that it begins with another form of the C chord, necessitating different forms of the succeeding chords.

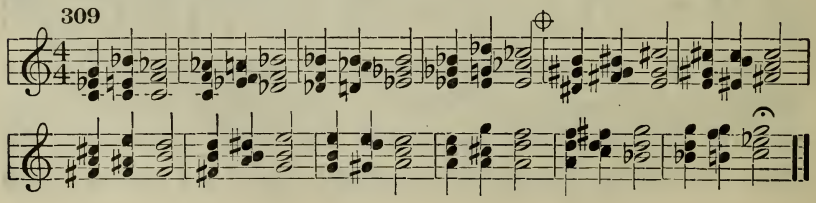
Ex. 306 differs from 305 by being in open harmony.

Ex. 307 is the same as Ex. 302, except that the first chord is in the second inversion, which causes the succeeding chords to appear in forms that are different.

Ex. 308 differs from 307 by being in open harmony.

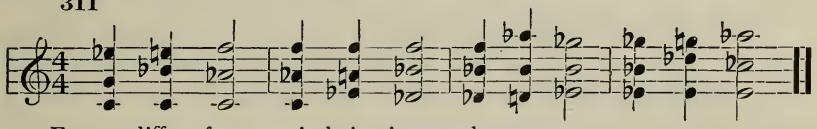
Exs. 302 to 308, inclusive, should be compared with Exs. 146, 147, 150, 151, 156, 157, 172, 173, 182, 183, 184, 185, 186, 187.

309



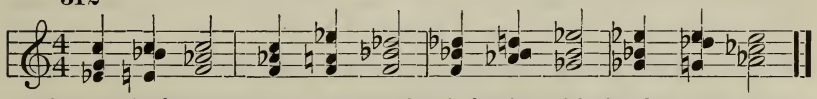
310. Ex. 309 will be found very interesting, and should be compared with 295. It is a series of modulations, by means of the dominant 7th-chord, around the Circle of Minor Keys to the left. Here the first chord is the C minor chord; then the Fifth of the chord moves up to the Seventh of the dominant 7th of which C is the Root, the Third of the C minor chord moving up a half-step to make the Third of the dissonant chord; now this dominant 7th-chord resolves normally to the F minor chord. The Fifth and Third (now in different parts) of this F minor chord move up in exactly the same manner, forming the dominant 7th on F, which resolves normally into the B♭ minor chord, etc.

311



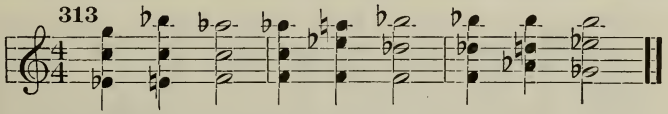
Ex. 311 differs from 309 in being in open harmony.

312



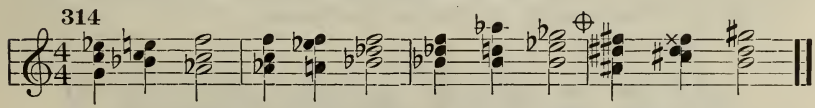
Ex. 312 is the same as 309, except that it begins with the first inversion of the chord, which causes the succeeding chords to appear in different forms.

313



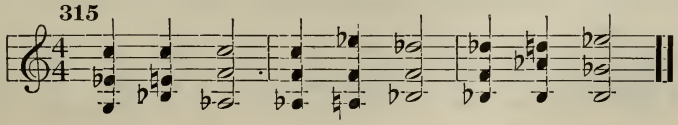
Ex. 313 differs from 312 in being in open harmony.

314



Ex. 314 is the same as 309, except that it begins with the second inversion of the first chord, which causes the succeeding chords to appear in different forms.

315



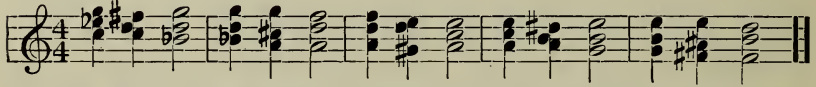
Ex. 315 differs from 314 in being in open harmony.

The student should become so familiar with these exercises that he can begin with any minor chord in any form, and carry out the modulations: he may end in any key he wishes, using the authentic or the plagal cadence to establish firmly that particular tonality.

Now the student should play over all the cadence-exercises as found in Chapter VI, substituting the dominant 7th-chord for the dominant common chord wherever the latter chord appears.

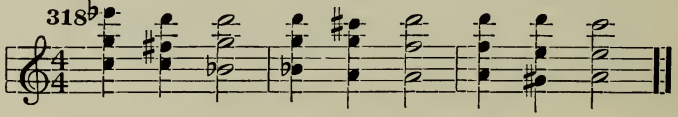
The work in analysis should never be neglected. (See Appendix II.)

316



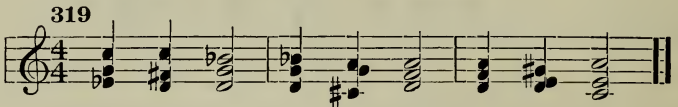
317. Ex. 316 uses the dominant 7th-chord as a means of modulation from one minor key to the dominant minor related key. The Third and Fifth of the first minor chord move down half-steps, forming the dominant 7th-chord of the new key, which chord resolves normally into the tonic minor chord on G. Again the Third and Fifth (now in different voices) move down by half-steps to form the dominant 7th of the new key (*d*), which dominant 7th resolves normally. This kind of progression is to be continued until the original chord is again reached. Compare 316 with 302.

318



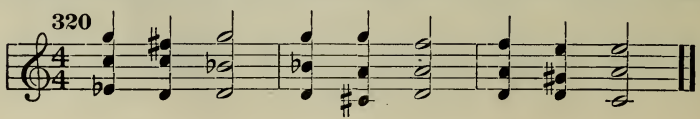
Ex. 318 differs from 316 in being in open harmony.

319



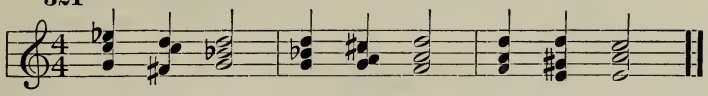
Ex. 319 is the same as 316, except that the form of the first chord is in the first inversion, which causes the other chords to appear in different forms.

320



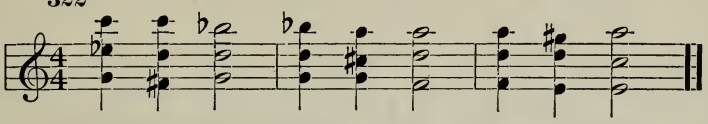
Ex. 320 differs from 319 in being in open harmony.

321



Ex. 321 is the same as 316, except that the first chord begins in the second inversion, which makes it necessary that the following chords appear in different forms.

322



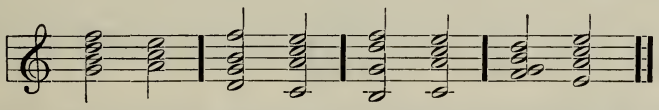
Ex. 322 differs from 321 in being in open harmony.

Carefully notice in Exs. 316 to 322 how the tones which move down to form the dominant 7th-chord occur in **different** voice-parts.

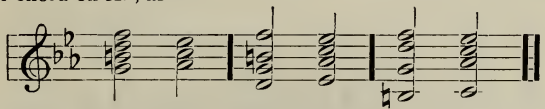
DECEPTIVE RESOLUTIONS OF THE DOMINANT 7TH-CHORD

323. Another very common resolution of the dominant 7th-chord is into the chord on 6 of the scale to which the dominant 7th belongs.

In the major key this will cause the dominant 7th to resolve into a minor chord whose Root is a whole-step above the Root of the dominant 7th. Thus the dominant 7th-chord on G (G–B–D–F) in the key of **C,** would resolve into **the minor chord on A,** as



324. In the minor key this resolution will cause the dominant 7th-chord to resolve into a major chord whose Root is a half-step above the Root of the dominant 7th. Thus in the key of *c* minor, the dominant 7th on G (G–B–D–F) would resolve into the major chord on A♭, as



Notice particularly that this resolution of the dominant 7th-chord in the major key is into a minor chord, and in the minor key is into a major chord.

325. This resolution of the dominant 7th-chord is called the **deceptive resolution.**

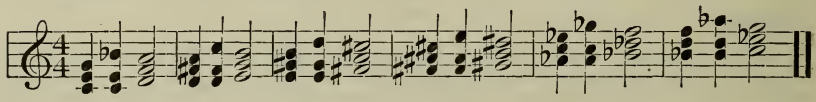
Compare the deceptive cadence in Chapter VI with this deceptive resolution, and introduce this resolution of the dominant 7th into the cadence-exercises, substituting the 7th-chord on the dominant wherever the dominant common chord is used.

326. It is important to know that in the deceptive resolution of the dominant 7th-chord, every tone resolves the same as in the normal resolution, except the Root, which instead of skipping to the tonic note of the key now moves up one degree to the submediant. The Seventh of the chord resolves down one degree; the Third resolves up to the tonic one degree, and the Fifth is free to move up or down one degree, these three parts of the chord resolving identically in the normal and deceptive resolutions.

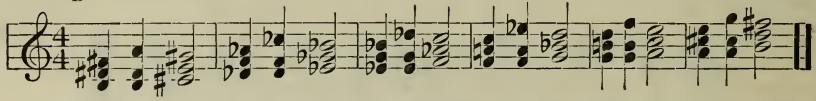
EXERCISES ILLUSTRATING THE DECEPTIVE RESOLUTION OF THE DOMINANT 7TH-CHORD.

These exercises are to be finished, and each chord and chordal progression to be analyzed, and put into practical use at the piano or organ.

327 A

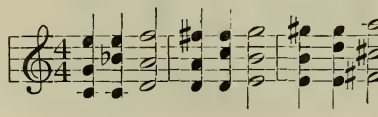


B

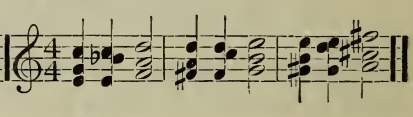


328. Ex. 327 is an example of the deceptive resolution of the dominant 7th-chord into the chord on 6 of the major key to which it belongs. As the progression is up by whole-steps (C–D–E–F♯–A♭–B♭–C) the exercise is divided into two sections, causing all the dominant 7ths to be used.

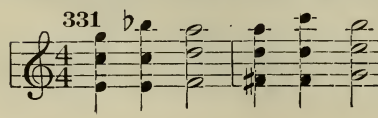
329



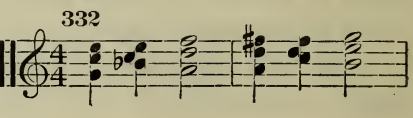
330

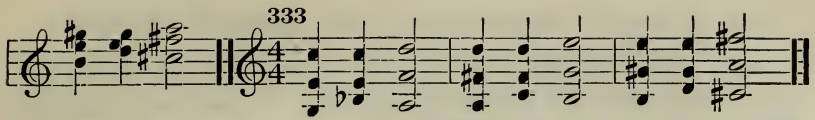


331



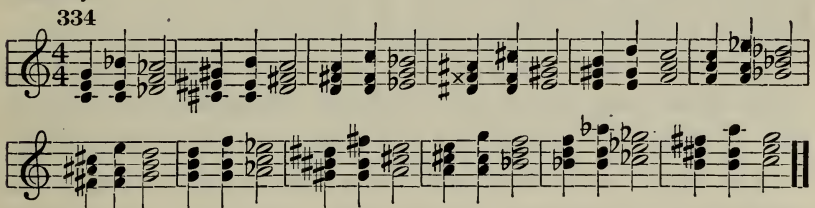
332



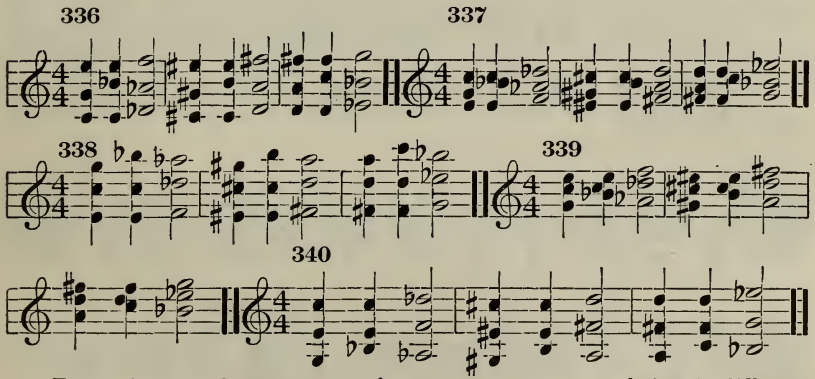


Exs. 329, 330, 331, 332, and 333 are the same as 327, except being in different inversions, or in open harmony. All are to be finished in the same manner as 327.

The student should be so familiar with these progressions that he can begin at any chord, using the progressions as far as he pleases, and end in any key he wishes, using the authentic or plagal cadence to establish firmly the final key.



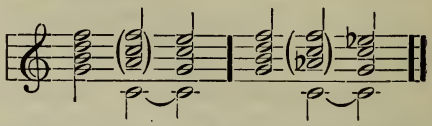
335. Ex. 334 is an example of the deceptive resolution of the dominant 7th-chord into the chord on 6 of the minor key to which it belongs. This causes a series of modulations upwards by half-steps.



Exs. 336, 337, 338, 339, 340 are the same as 334, except being in different inversions, and in open harmony. The numerous enharmonic changes are needed to make the spelling of the various chords conform to the keys into which the progressions are made. All of the chords should be analyzed, the student giving the Root, in what inversion they appear, and in what key they belong.

THE DEFERRED RESOLUTION OF THE DOMINANT 7TH-CHORD

341. There is still another method of resolving a dominant 7th-chord; instead of the chord's progressing at once into the tonic chord (major or minor), it goes into the chord on 4 of the scale, and then to the tonic chord.

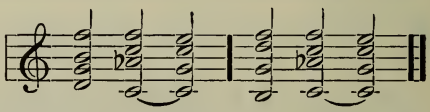


The chords enclosed in brackets are on 4 of the key, and are interposed between the dominant 7th-chord and its normal resolution into the tonic chord.

342. This peculiar resolution is called the **deferred** resolution, which means that the normal resolution is deferred, or put off a short time, by this interposition of the chord on the sub-dominant.

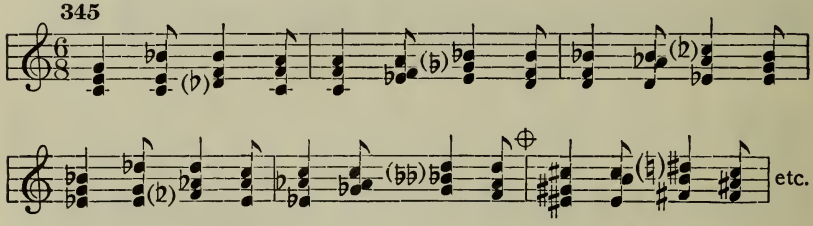
343. Notice that the Root of the sub-dominant chord is the Seventh of the dominant 7th-chord, this tone being the common tone between the two chords.

344. In the major key the deferred resolution frequently has a minor chord on the sub-dominant instead of a major chord, thus:

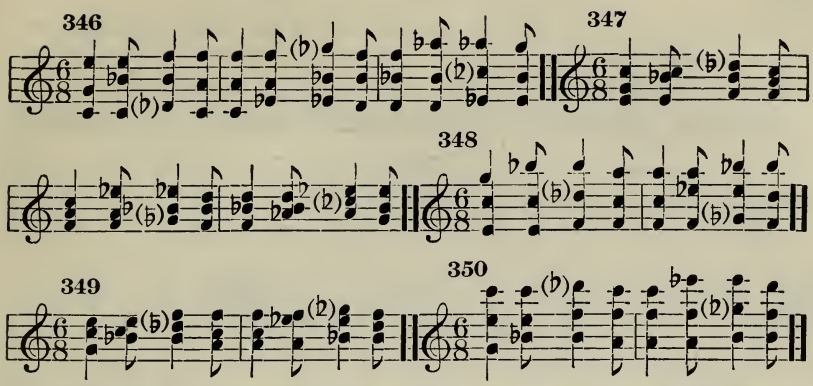


This gives a quality of plaintiveness, a different tone-color, to the progression.

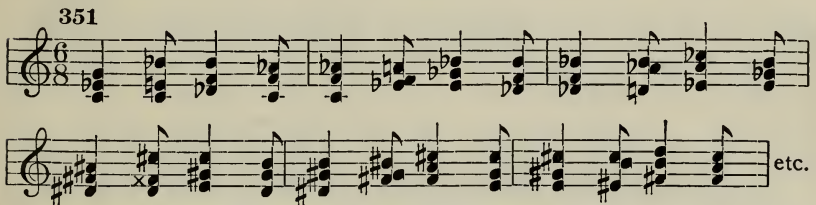
345



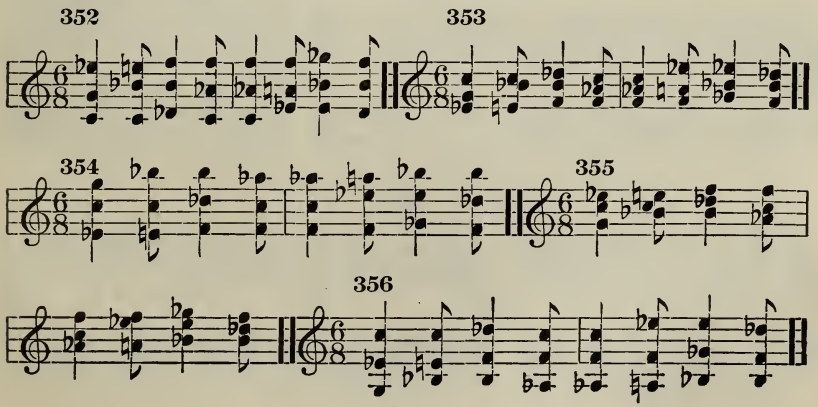
Ex. 345 is the same as 295, with which it should be compared, except that the chord on 4 of the scale is interposed between the dominant 7th-chord and the tonic chord, causing the deferred resolution. All the following exercises are to be finished in the same manner.



Exs. 346, 347, 348, 349, and 350 are the same as 345, except being in different inversions or in open harmony. The accidentals in brackets show how the chord on 4 of the major keys may be altered into a minor chord. Use the exercises in both ways, with major and minor chords on 4 in the major key.



Ex. 351 is an example of the dominant 7th-chord with the deferred resolution into the chord on 4 of the minor keys. It should be compared with 309.

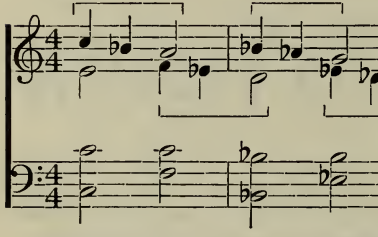


Exs. 352, 353, 354, 355, and 356 are the same as 351, except that they are different inversions and open harmony. All are to be finished the same as 351. Compare 352 to 356 with 311 to 315.

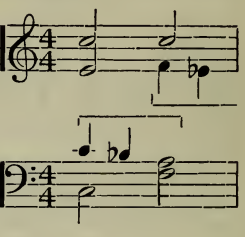
FOUR-PART EXERCISES ILLUSTRATING DOMINANT 7TH-CHORDS

These exercises are to be completed all around the Circle of Keys, and each chord and chordal progression fully analyzed.

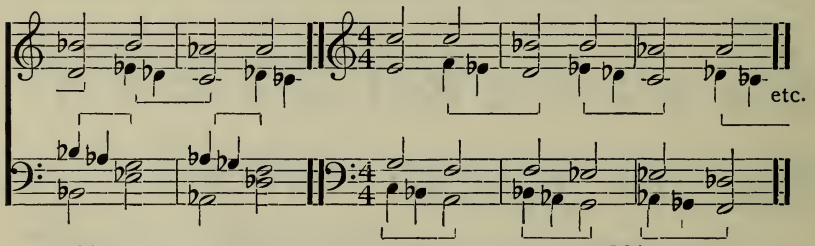
357



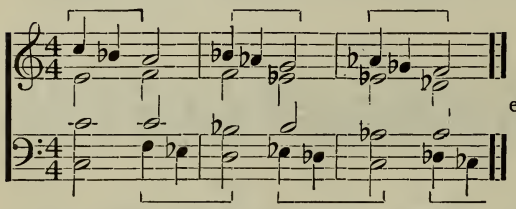
358



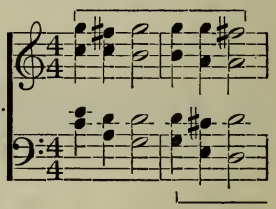
359



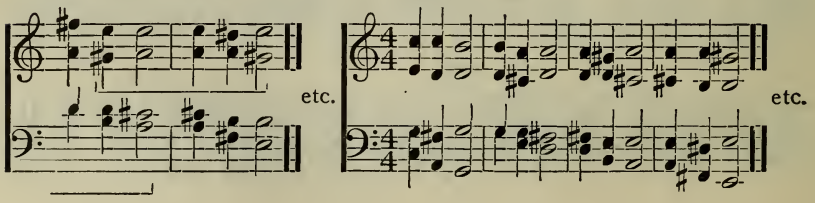
360



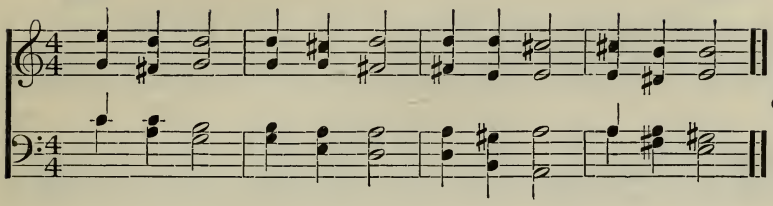
361



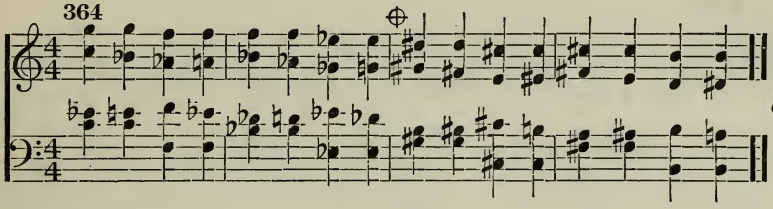
362



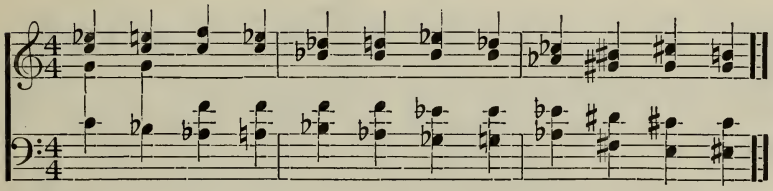
363



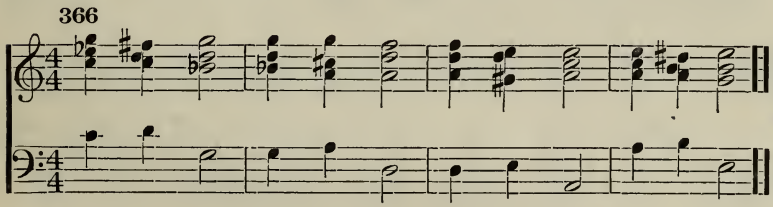
364



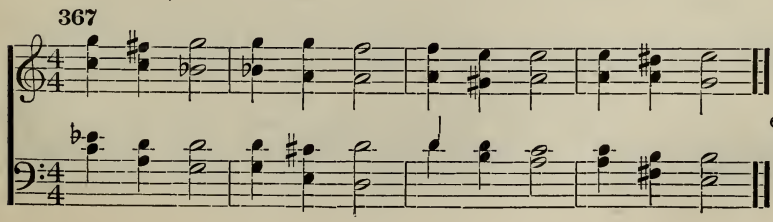
365

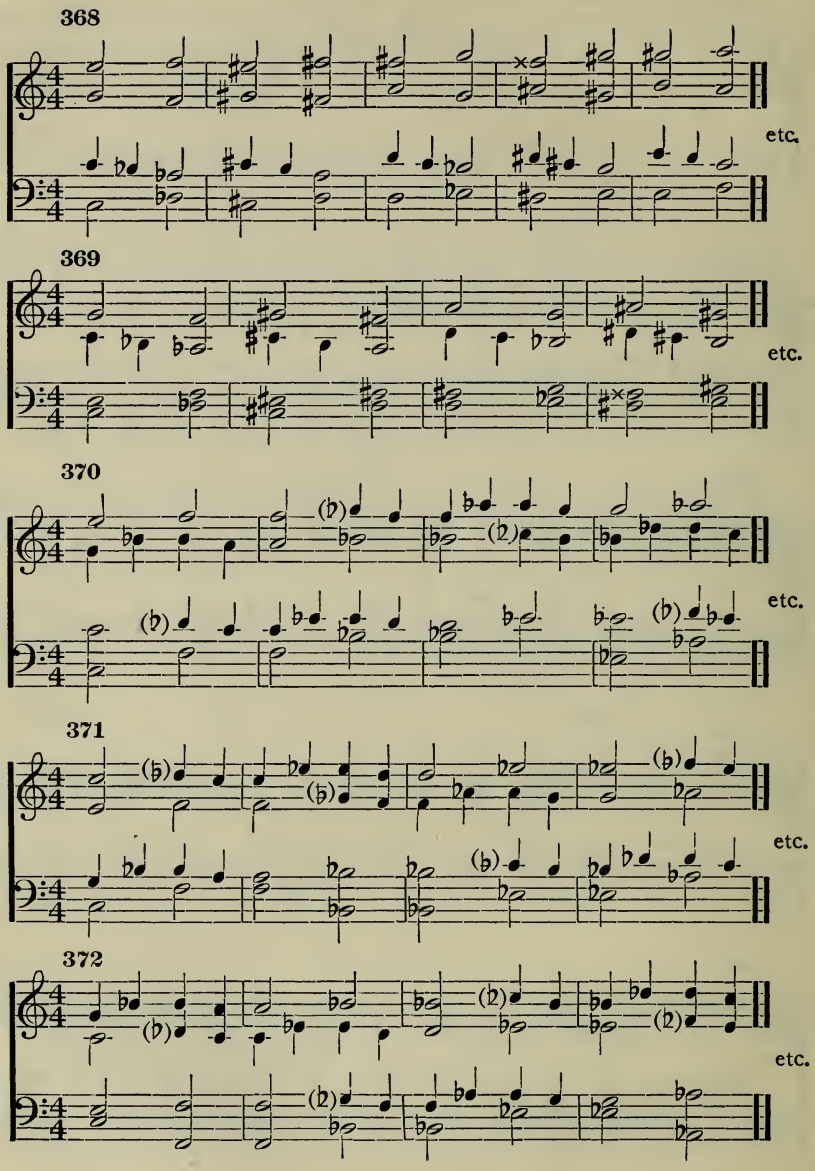


366

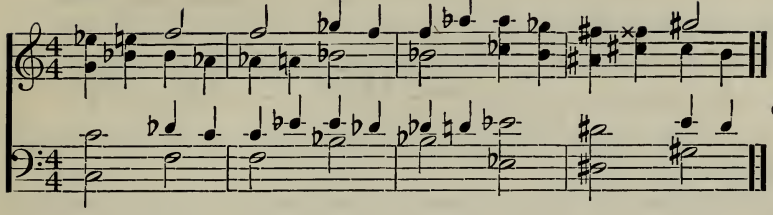


367

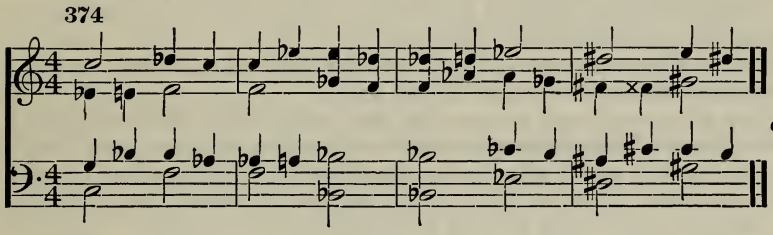



368
etc.
369
etc.
370
etc.
371
etc.
372
etc.

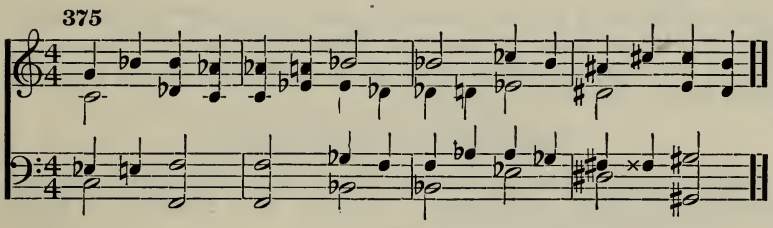
373



374



375

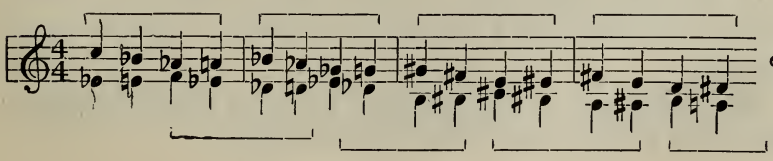


Notice, in Exs. 357, 358, 359, and 360, how the parts are reversed, and how in each exercise they imitate one another.

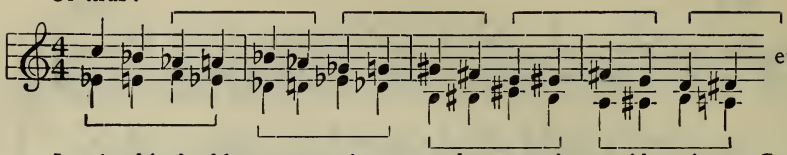
Compare these exercises with 295, 296, 297, 298, 299, 300, and with 158, 159, 174, and 175.

Notice the imitations in Exs. 361, 362, and 363, and compare them with 302, 304, 305, 306, 307, and 308.

In Ex. 364 particularly notice the imitation and double (See 197) counterpoint which occurs in the inner voices, thus:



Or thus:



In 365 this double counterpoint occurs between the outside voices. Compare 364 and 365 with 302.

Work out two more forms of these progressions, first putting the imitations between the soprano and alto, and then between the tenor and soprano.

Compare 366 and 367 with 316, 318, 319, 320, 321, and 322. The student is to find two more forms for this exercise.

Compare 368 and 369 with 334. Two more forms of the chords using the same progressions are to be found by the student.

Notice in 370, 371, and 372 how the parts are reversed, causing imitations of various kinds. The accidentals enclosed in brackets show that that particular chord may be major or minor, giving different effects; use both progressions in working out the exercises. Compare these three exercises with 345.

Compare 373, 374, and 375 with 351, 352, 353, 354, 355, and 356. Also with 370, 371, and 372.

The completion of all the exercises in this chapter will give a thorough knowledge of the dominant 7th-chord. In Chapter XIII will be found a more exhaustive treatment of a large number of the possibilities of this chord, all of which are very useful and effective.

EXERCISES IN EAR-TRAINING

In the preceding chapters it was shown that the diminished and augmented common chords are discords. See 94 ff. Also the method of distinguishing these chords was fully explained (94 ff.).

If the student has availed himself of the foregoing, he is in a position to appreciate, by hearing, the combinations of tendencies, the forms and inversions of the dominant 7th-chord; and to judge of its artistic importance, — perhaps unequalled by that of any other chord.

376. The dominant 7th-chord, being a discord, must resolve, and the perfectly natural, eminently satisfactory resolution is to the major chord on the tonic of the key, as in 289.

It will require some little training before a class will accept the tonic minor chord as a satisfactory resolution for the dominant 7th-chord.

377. Every tone in the dominant 7th has a natural tendency, which must be firmly established in the hearing.

The Root of the chord, being 5 of the key (the **insistent tone**), pushes up or down, by a skip, to the tonic note of the key (the **point of repose** of the key), and no other resolution of that tone will give the feeling of completeness.

The Third of the dominant 7th, being the leading-tone of the key, pushes up smoothly one scale-step into the tonic note.

The Seventh of the chord, being 4 of the scale, pushes down one scale-step into the Third of the tonic chord (the **quality tone**).

The Fifth of the chord may move down one scale-step, or up the same distance; if it progresses down, it will go into the tonic note, but if it moves up it will progress into 3 of the key; therefore, the preference would be down.

Thus we see that the Root of the dominant 7th, the Third and the Seventh, have a positive and natural tendency for one resolution, while the Fifth has a choice of two resolutions.

Review Chapter I (Ear-Training) upon the tendencies of the tones of the scale towards the tonic.

378. In the natural resolution of the dominant 7th, the Root **skips** up a perfect Fourth, or down a perfect Fifth.

The Third moves up one scale-degree.

The Seventh moves down one scale-degree.

The Fifth may move up or down one scale-degree, preferably down.

The foregoing should be memorized.

379. The Root of the dominant 7th-chord stands out so prominently, and the complete resolution of the chord is so natural and urgent that it cannot be confused with any other chord.

METHOD OF DISTINGUISHING INVERSIONS OF THE DOMINANT 7TH-CHORD

380. If the lowest tone of the chord skips, or desires to skip for resolution, it must be the Root of the chord, hence the chord is not inverted.

If the lowest tone of the chord moves up, or desires to move up one scale degree in the natural resolution, the chord must be in

the first inversion, because the tone of the dominant 7th-chord which pushes up in that manner is the Third of the chord, and any chord which has the Third in the bass is in the first inversion.

If the lowest tone of the chord desires to move down for resolution the chord must be in the third inversion, because the tone of the dominant 7th-chord which pushes down in that manner is the Seventh of the chord, and any chord which has the Seventh in the bass is in the third inversion.

If the lowest tone of the chord may move up or down one scale degree for resolution, the chord must be in the second inversion, because the tone of the dominant 7th-chord which has a choice of movement is the Fifth, and any chord which has the Fifth in the bass is in the second inversion.

The teacher should play the various dominant 7th-chords in all forms and inversions, requiring the listeners to tell what note of the chord the lowest tone is, what the highest tone is, and then what the middle tones are, using the above method of distinguishing between the various tones. The chord should be played slowly, one note at a time, in order that the attention of the students may be fixed upon the particular tone that is under consideration. The normal resolution should be contrasted with the others until the class is entirely familiar with it.

381. In the normal resolution into the **tonic minor chord,** all the tones progress as before, except the Seventh of the chord, which now moves down a whole-step, instead of a half-step.

Use the normal resolution to the major and then to the tonic minor chord until the class knows instantly which is being played.

382. In the deceptive resolution into the chord on 6 of the major key, every tone will resolve naturally, except the Root, which, instead of skipping for its resolution, now moves up one scale-degree into the Root of the new chord. The deceptive resolution in the major mode always gives a minor chord.

Use the normal and deceptive resolutions of the dominant 7th in the same key, until the student knows instantly which is being played.

383. In the deceptive resolution into the chord on 6 of the minor key, every tone resolves as in the normal resolution into

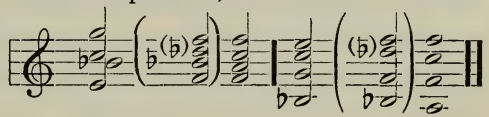
the tonic minor chord except the Root, which, instead of skipping to the tonic, moves up one half-step to the Root of the new chord. In the minor key, this deceptive resolution of the dominant 7th-chord always gives a major chord.

Use the normal resolution in minor, and then the deceptive resolution in the same key, until the student knows instantly which is being played.

Contrast these four resolutions of the dominant 7th-chord (normal major, deceptive in the major key; normal minor, and deceptive in the minor) at pleasure, requiring the student to name which one has been used.

This ear-training work should be done slowly and carefully, so that the minds of the listeners can adjust themselves to these different effects, and weigh them, making the mental comparisons.

384. In the deferred resolution, the Seventh of the chord does not resolve, but the Third does, as also the Fifth, and the effect of the Root **seems** a skip to the tonic note. The real effect of the deferred resolution is a Double Suspension, two tones of what we naturally expect being held back; thus, in the accompanying example,



after the first chord the ear expects to hear an F and an A, possibly a C, but the A is held back, suspended by the B♭, and the C also is held back, suspended by the D, or D♭. (See 528 to 534.)

Contrast all the resolutions of the dominant 7th-chord thus far used, resolving the chord from all inversions and forms as in Exs. 289 to 375, until the student can readily recognize just what is being played at the piano.

385. The working out of this chapter is absolutely **essential.** It will require time, but it will amply repay any expenditure of time or trouble.

In Chapter XIII will be found many more possible uses for the dominant 7th-chords.

CHAPTER X

AUGMENTED AND DIMINISHED CHORDS

386. The possible combinations of consonant chords by means of the diminished and augmented common chords are almost unlimited in number; as time progresses, new possibilities are being discovered by composers.

387. The whole trend of modern music since Bach is away from the narrow confines of a single key, or even of the most nearly related keys, towards the wonderfully broad field of chord-relation, with little regard to key-relation except of the most general nature, as outlined in Chapter III and Appendix I, Section A.

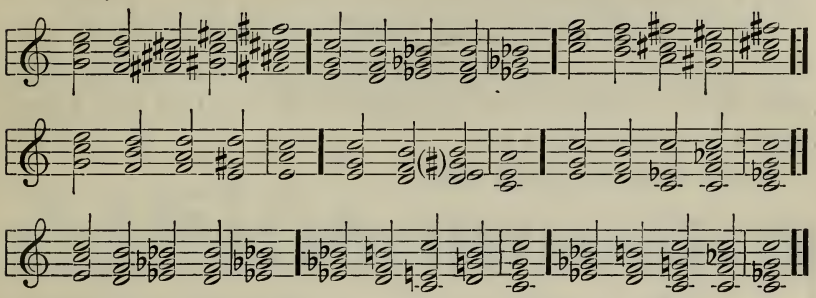
388. The diminished and augmented common chords open immense possibilities in this field. A few of these will be outlined in this chapter. It is of very little practical value to know the various theories regarding these chords; but the musician of modern times must know the facts of their existence, and must have an intelligent idea of their possibilities in chord-connection.

389. The diminished and augmented chords, being discords, call for resolution, and there are several resolutions possible for each.

THE DIMINISHED CHORD

390. The diminished chord on B, B–D–F, may occur in **C**, in *c* harmonic minor, and in *a* harmonic or normal minor; hence it may be used as a connecting link between any two of these keys. If an enharmonic change be made (the sounds remaining the same) to B–D–E♯, the chord may occur in **F**♯, and in *f*♯ harmonic minor. If another enharmonic change be made (C♭–D–F), the chord would occur in *e*♭, harmonic; hence this chord B–D–F, or the chords

which use the same sounds, may be used as a means of modulation from any one of these six keys (**C**, *c*, **F♯**, *e♭*, *f♯*, *a*) into any of the other keys. Thus:



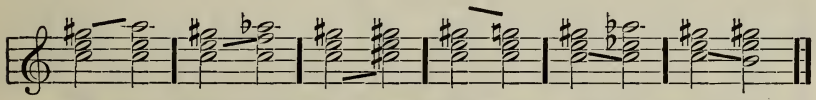
391. This diminished chord (B–D–F) contains the leading-tone (B) and 4 of the keys of **C** and *c* harmonic minor (the **characteristic tones** of those keys). And *a* is the relative to **C.**

This same chord (the same sounds, B–D–E♯) contains 4 and 7 (**characteristic tones**) of **F♯** and *f♯* harmonic minor; and *e♭* is the relative to **F♯** (or **G♭**).

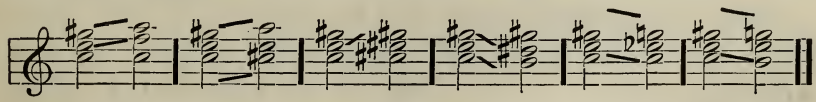
The student should build a diminished chord upon each note, and work out the possibilities of each.

THE AUGMENTED COMMON CHORD

392. Any note of the augmented chord may move either up or down, a half-step. This will give six resolutions of the chord, thus:



393. Any **pair** of notes in the augmented chord may move up or down by half-steps. This will give six more resolutions, thus:

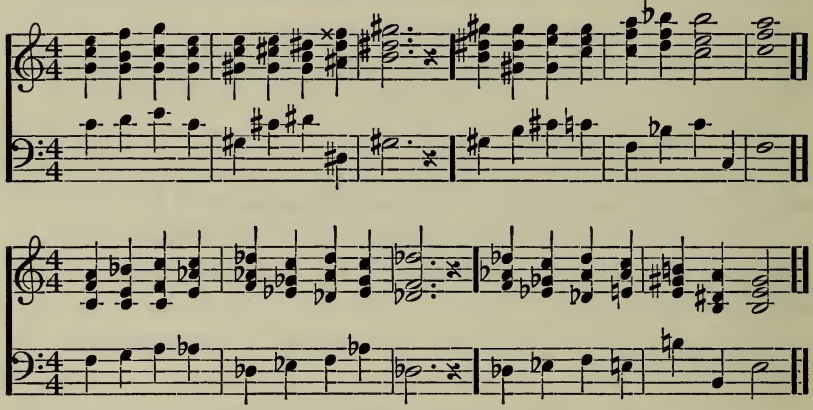


394. It should be noticed that when one tone moves up a half-step, the chord becomes minor. When any one tone moves down

a half-step, the chord becomes major. When two tones move up by half-steps, the chord becomes major. When two tones move down by half-steps, the chord becomes minor.

395. Any one of the major or minor chords into which this chord progresses may be taken as the tonic chord of a new key, after which a cadence may be played to fix the new key, if one desires to remain in that key.

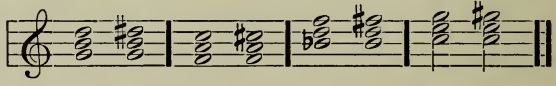
A few examples appear thus:



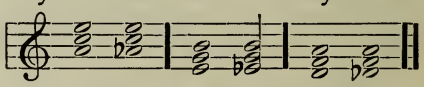
The bass in these progressions, in the augmented chords, should take the tonic or the dominant note of the key into which one desires to modulate.

396. By means of three augmented chords, modulations may be made from the key of **C** (or any other key) into all the remaining keys.

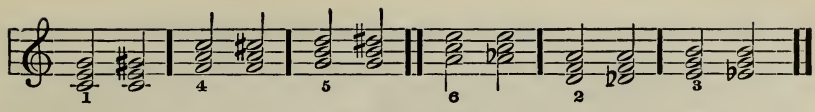
397. An augmented chord may be made out of any major chord by raising the Fifth a half-step; thus:



398. An augmented chord may be made out of any minor chord by lowering the Root a half-step; thus:



399. In the major key there are three major and three minor chords which may be altered into augmented chords. Thus in **C**:

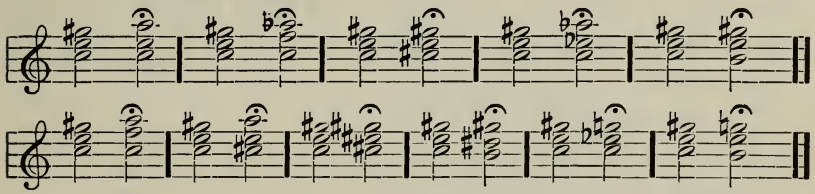


The chord on the first degree with raised Fifth is exactly like the chord on 6 with lowered Root.

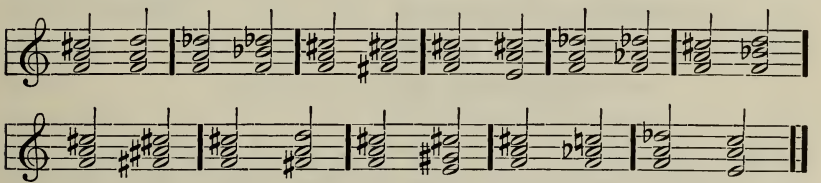
The chord on 4 with raised Fifth is exactly like the chord on 2 with lowered Root.

The chord on 5 with raised Fifth is exactly like the chord on 3 with lowered Root.

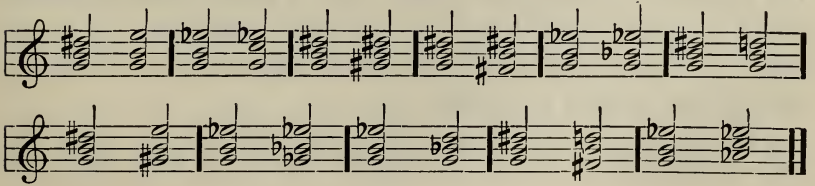
400. Through the augmented chord on C (C–E–G♯), modulations may be made from the key of **C** into *a*, *f*, *c*♯, **A**♭, **E, F, A, C**♯, *g*♯, *c* and *e*; thus:



401. Through the augmented chord on F (or its duplicate, on D♭), modulations may be made into *d*, *b*♭, *f*♯, **A, D**♭, **B**♭, **F**♯, **D**, *c*♯, *f*, and *a*; thus:



402. Through the augmented chord on G (or its duplicate on E♭), modulations may be made into *e*, *c*, *g*♯, **B, E**♭, **G, E**, *e*♭, *g*, *b* and **A**♭; thus:



403. When the duplicate keys into which modulations may be made are stricken out, a list of twenty-three tonic chords, eleven major and twelve minor, will be left. Hence we see that by the means of three augmented chords, modulations may be made from the key of C into all the other major and minor keys.

404. It is self-evident that the establishment of this fact regarding modulations from one key into the others is sufficient to show its applicability to all other major and minor keys.

A full statement of this chord's possibilities in all the major and minor keys would make a book by itself. The student should take an augmented chord on each note and work out all its possible connections and resolutions.

405. There are twelve major, twelve minor and twelve diminished chords which differ in sound; but there are only four augmented chords which differ in sound:

The one on C, or E, or A♭.

The one on C♯, or F, or A.

The one on D, F♯, or B♭.

The one on E♭, G, or B.

406. The only place an augmented chord can be found belonging to a key is on 3 of the harmonic minor key, but we have seen how an augmented chord may be made from a major or a minor chord.

EXERCISES IN EAR-TRAINING

407. The effect of these diminished and augmented chords upon the ear is entirely independent of the names of the notes contained in them; therefore correct "spelling" of these chords is not essential in Ear-Training. Use all the progressions, requiring the students to distinguish which tone or tones of the dissonant chord have moved, and how far. Use the diminished and augmented chords in all forms, inversions, open and close harmony, with all the possible resolutions.

Play an augmented chord, as C–G♯–E, with resolution to C–A–E. Explain to the class that the first chord was C–G♯–E; ask them what tones

moved to form the next chord, and how far? also what is the chord that is now heard? Continue this method of work and questioning throughout all the resolutions of the diminished and augmented chords, requiring the classes to describe just what chords and progressions are heard.

If this method of work be persisted in, the student will soon be able to follow any progressions that may be heard, and he will acquire a fine appreciation of music and musical effects — an essential of musicianship.

TECHNICAL TERMS USED IN CHAPTERS VI TO X

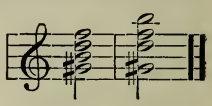
Principal Chords.
Subordinate Chords.
Cadence.
Perfect Authentic Cadence.
Authentic Cadence.
Plagal Cadence.
Church Cadence.
Amen Cadence.
Semi-Cadence.
Half-Cadence.
Deceptive Cadence.
Surprise Cadence.
False Cadence.
Question.
Answer.
Antecedent.
Consequent.
Anticipation.
Ornamentation.
Section.
Phrase.
Period.
Harmonization.
Seventh-Chords.
Dominant 7th-Chord.
Third Inversion.
Five-Six-Chord.
Three-Four-Chord.
Two-Chord.
Diminished 7th-Chord.
Normal Resolution.
Deceptive Resolution.
Deferred Resolution.

CHAPTER XI

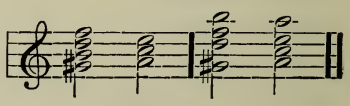
THE DIMINISHED SEVENTH-CHORD

408. As explained in Chapter IX, 282, the diminished 7th-chord is built of a diminished common chord, plus a diminished Seventh from its Root; or of three minor thirds, one above another.

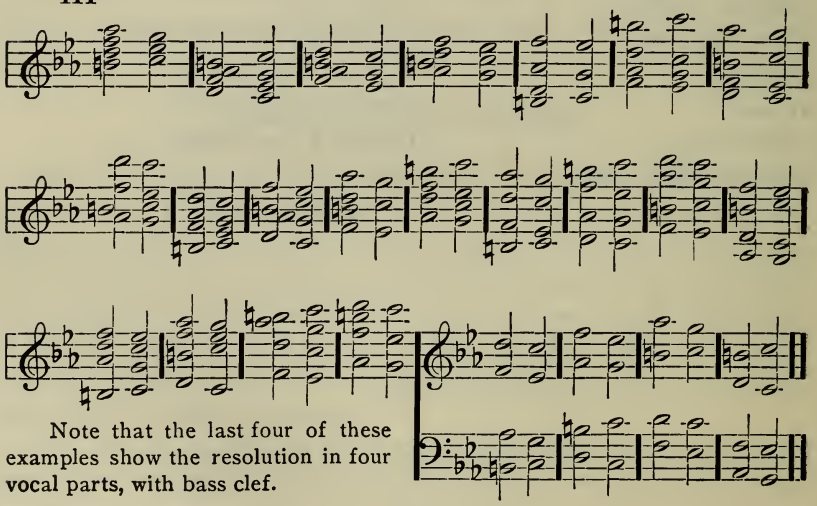
409. The diminished 7th-chord appears as a legitimate chord-formation on 7 of the harmonic minor keys. 7 in the key of *a* harmonic minor is G♯, and the 7th-chord on that note in that key is the diminished 7th-chord on G♯.



410. The ordinary resolution of this chord is into a common chord on the tonic of the key.

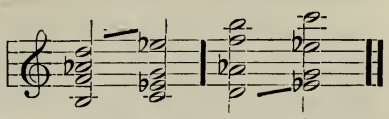


411



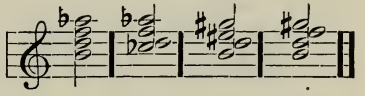
Note that the last four of these examples show the resolution in four vocal parts, with bass clef.

412. Ex. 411 is the diminished 7th-chord on B in the key of *c* in twenty-four simple forms; six as fundamental, six as first inversion, six as second inversion, and six as third inversion, each one resolving into the tonic chord of *c*. The Third of the diminished 7th-chord may resolve up into the Third of the tonic chord, instead of down into the tonic.

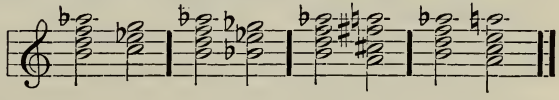


The student should build a diminished 7th-chord on each note and play it in the twenty-four forms; resolving each into the tonic chord of the key to which the diminished 7th-chord belongs, resolving the Third of the chord up or down, as explained above.

413. As in the case of augmented chords, any note in a diminished 7th-chord may be taken as the Root.

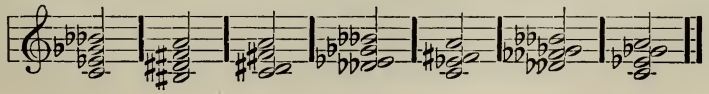


All these chords look alike at the keyboard, and to the ear sound alike; but the first chord has B for its Root and is a chord in the key of *c* harmonic minor. The second chord has D for its Root and is a chord on 7 of *e*♭ harmonic minor. The third chord has E♯ for its Root and is a chord on 7 of *f*♯ harmonic minor. The fourth chord has G♯ for its Root and is a chord on 7 of *a* harmonic minor. Therefore this one diminished 7th-chord on B, no matter what the names of the individual notes may be, may resolve into any minor chord whose Root is a half-step above any note in the diminished 7th-chord. Each of these four resolutions is equally good.

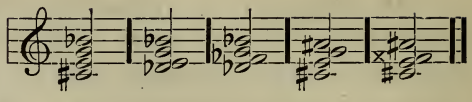


414. As a consequence, it is evident that there are only three diminished 7th-chords which sound differently from one another: those on C, C♯, and D.

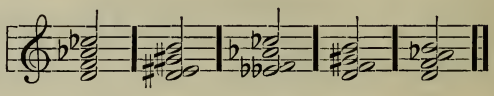
415. The diminished 7th-chords on C or B♯, D♯ or E♭, F♯ or G♭, and on A look alike at the keyboard, and sound alike; thus:



416. The diminished 7th-chords on C♯, E, G or F×, and A♯ look alike at the keyboard, and sound alike.

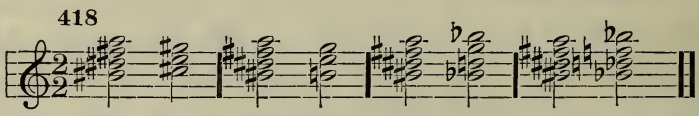


417. The diminished 7th-chords on D, E♯ or F, G♯ and B look alike at the keyboard, and sound alike.



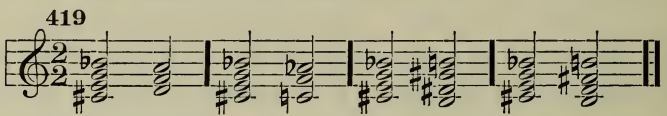
From this point all the exercises using diminished 7th-chords are to be played in the twenty-four forms, as found and explained in 411, 412.

418



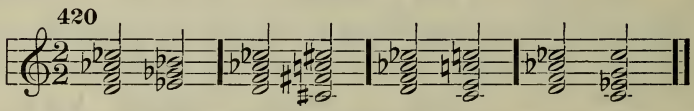
Ex. 418 is the diminished 7th-chord on B♯ (or any one of the other notes), with the four common resolutions into minor chords.

419



Ex. 419 is the diminished 7th chord on C♯ (or any one of the other notes), with the four common resolutions into minor chords.

420



Ex. 420 is the diminished 7th-chord on D (or any one of the other notes), with the four common resolutions into minor chords.

These diminished 7th-chords are to be played in the twenty-four forms as in Ex. 411, and each form resolved into the four commonly used minor resolutions.

421. The diminished 7th-chord is of such peculiar construction (when analyzed it is found to contain three minor Thirds, two diminished Fifths or augmented Fourths, and one diminished Seventh), that it provides many progressions of great beauty and utility.

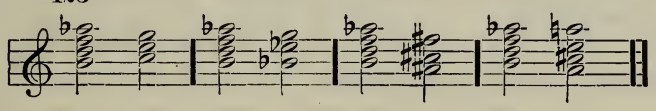
The diminished 7th-chord is dissonant not on account of the interval of a diminished Seventh which it contains, but because of

the two diminished Fifths which are found in it. The diminished Seventh cannot be dissonant for the reason that the major Sixth, its equivalent, is not dissonant.

422. In the diminished 7th-chord on B (B–D–F–A♭), the first diminished Fifth (B–F) contains the leading-tone and 4 (**characteristic tones**) of the key of **C** and *c* harmonic minor; or enharmonically, the 4 and leading-tone (B–E♯), **characteristic tones** of **F♯** major and *f♯* harmonic minor. The other diminished Fifth in that chord (D–A♭) contains the leading-tone and 4 (**characteristic tones**) of **E♭** and *e♭* harmonic minor; or enharmonically (D–G♯), the 4 and leading-tone (**characteristic tones**) of **A** or *a* harmonic minor. Thus we see that this diminished 7th-chord (B–D–F–A♭) contains the **characteristic tones** of four major keys, **C, F♯, E♭** and **A,** and four harmonic minor keys, *c, f♯, e♭,* and *a;* naturally, therefore, this chord may resolve into the tonic chord of any of these eight keys.

The resolutions into the tonic minor chords having been effected in 411, 413, and 420, the major resolutions will follow in this form.

423

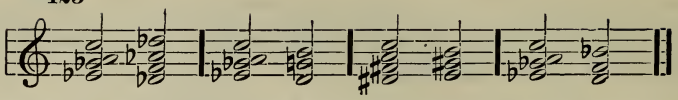


Ex. 423 shows the resolution of the diminished 7th-chord on B (or any one of the other notes which it contains), into the tonic chords of the major keys that it suggests. It should be worked out in the twenty-four forms, as in 411.

424. The diminished 7th-chord which contains C (C–E♭–G♭–A) contains the leading-tone and 4 (C–G♭) in the key of **C♯** or *c♯,* or 4 and leading-tone (C–F♯) in the key of **G** or *g* harmonic minor. It also contains the leading-tone and 4 (D♯–A) of the key of **E** or *e* harmonic minor; and the 4 and leading-tone of the key of **B♭** or *b♭* harmonic minor. As this diminished 7th-chord (C–E♭–G♭–A) contains the **characteristic tones** of four major and four minor keys, it may resolve into the tonic chords in any of these eight keys.

The resolutions into the tonic minor chords having been effected in **Ex.** 418, the resolutions into the tonic major chords here appear.

425

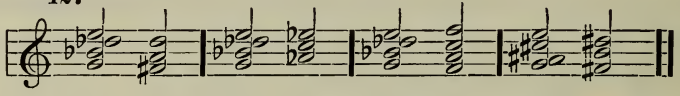


Ex. 425 is to be worked out in the twenty-four forms of the diminished 7th-chord, with the four resolutions into major chords.

426. The diminished 7th-chord on C♯ (C♯–E–G–B♭) contains the leading-tone and 4 (C♯–G) of the key of **D** or *d;* also 4 and the leading-tone (D♭–G) of **A♭** and *a♭* minor. The leading-tone and 4 (E–B♭) of **F** or *f;* and 4 and the leading-tone (E–A♯) of **B** or *b* minor; as this diminished 7th-chord contains the **characteristic tones** of four major and four minor keys, naturally the chord may resolve into the tonic chord in any one of these keys.

The resolutions into the tonic minor chords having been completed in 419, the major resolutions here follow.

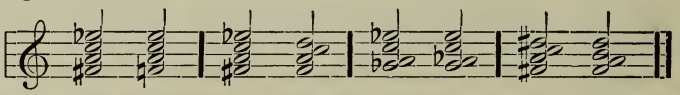
427



Ex. 427 is to be worked out with the twenty-four forms of the diminished 7th-chord, as in 411.

So far we have found eight resolutions for each diminished 7th-chord.

428. Any note in a diminished 7th-chord may move down a half-step; thus:

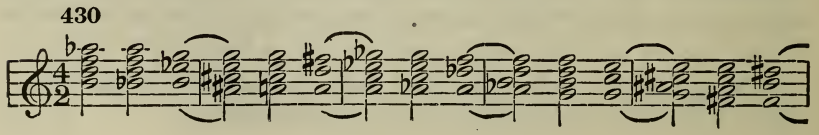


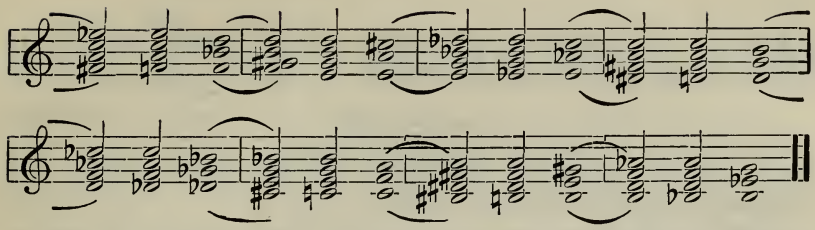
This gives a dominant 7th-chord from which any one of the numerous resolutions of the dominant 7th-chord may be made.

(See Chapter IX and Chapter XIII for complete treatment of the dominant 7th-chord.)

429. The note of the diminished 7th-chord which moves down a half-step to form a dominant 7th becomes the root of the new chord.

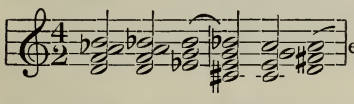
430



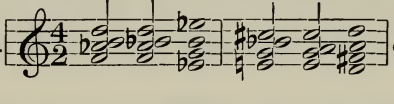


Ex. 430 explains itself. The lower note of each diminished 7th-chord moves down a half-step, forming a dominant 7th-chord which resolves normally into the tonic major chord.

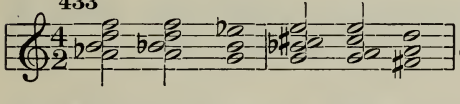
431



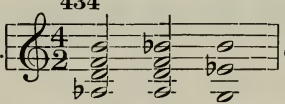
432



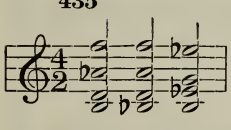
433



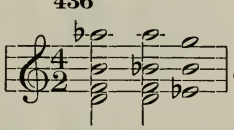
434



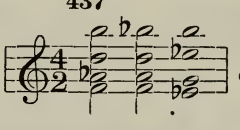
435



436

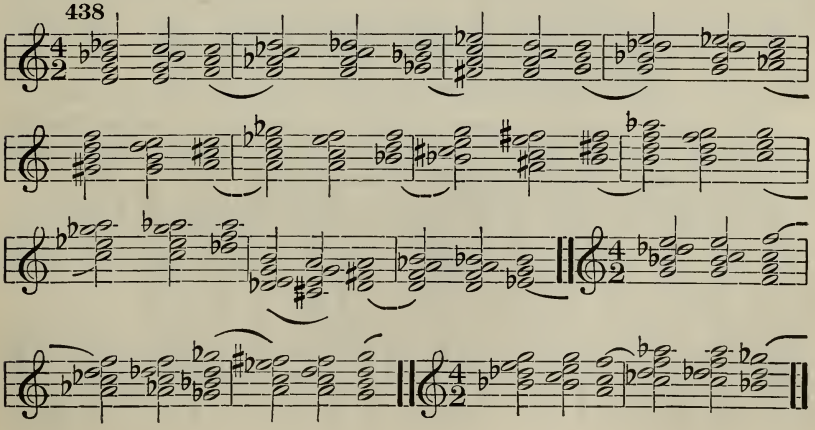


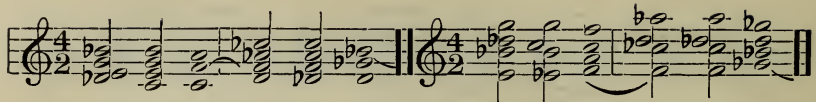
437



In 430, 431, 432, 433, 434, 435, 436, and 437 the general movement of the modulations and progressions is downwards by half-steps.

438



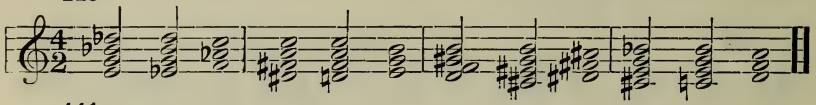


Ex. 438 in all the forms is self-explanatory. The diminished 7th-chords are changed into dominant 7th-chords which resolve normally. The general tendency of the progressions is now upwards. All the forms of the diminished 7th-chords are to be used in these exercises.

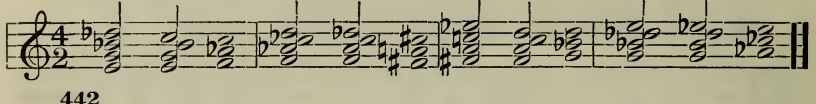
439. As has been explained, any resolution of the dominant 7th-chord may be used after the diminished 7th-chord progresses in this manner.

Examples follow of the other five resolutions of the dominant 7th-chord into which the diminished 7th-chord has progressed.

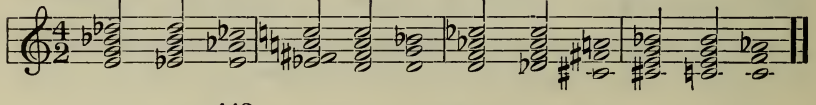
440



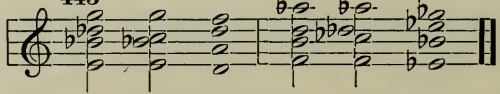
441



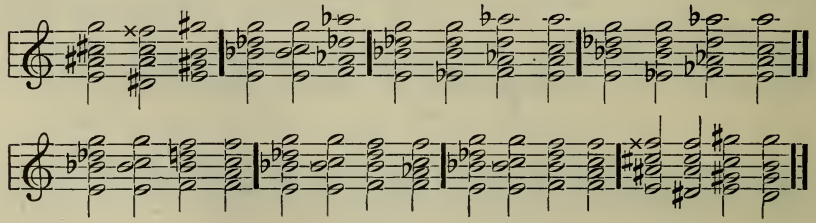
442



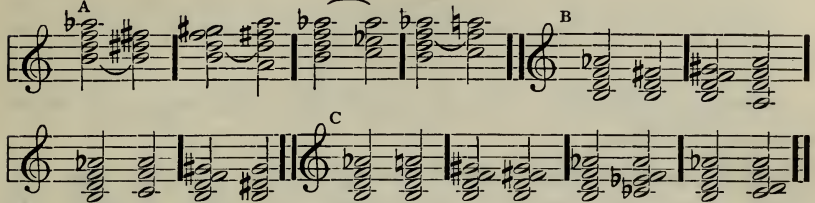
443



The student should now work out all the remaining successions himself, resolving the dominant 7th-chord into the chord on 6 of the minor key, and with the deferred resolution in the major and minor keys; as:



444. A diminished 7th-chord may progress into any major chord whose Root is one of the notes in this diminished 7th-chord, as at A.

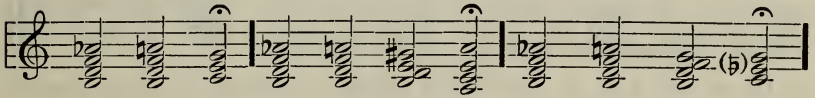


445. A diminished 7th-chord may progress into any minor chord whose Root is one of the notes in this diminished 7th-chord, as at B.

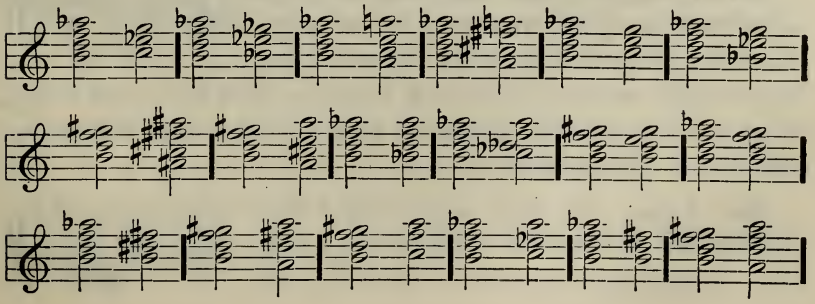
These eight resolutions should be worked out in all the forms of the diminished 7th-chords, as found in Ex. 411.

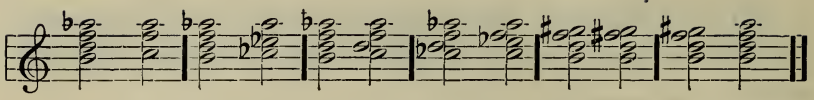
446. Any tone of a diminished 7th-chord may move up a half-step, as at C.

The second chord in each one of these measures is a **secondary** 7th-chord on 7 of a major scale, or on 2 of a minor scale, and the resolutions of these chords may be any of the resolutions, as explained in Chapter XII; thus:



447. So far we have twenty-four progressions for each of the diminished 7th-chords; grouped they appear thus:

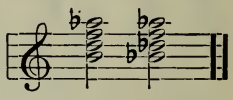




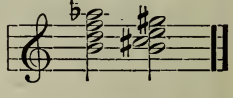
And still this does not exhaust the possibilities of this one chord.

448. Any two tones of the diminished 7th-chord may move down by half-steps.

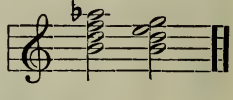
If the two lower tones move down by half-steps, the chord formed is a **secondary** 7th-chord which may be found on 2 of **A♭**; on 3 of **G♭**; on 6 of **D♭**; or on 4 of *f*. Naturally, this new 7th-chord may resolve as these chords resolve, as explained in Chapter XII.



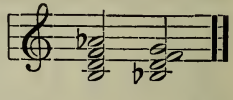
449. If the second and third tones of the diminished 7th-chord move down by half-steps, the chord which is formed is a secondary 7th-chord which may be on 2 of **B**; on 3 of **A**; on 6 of **E**; or on 4 of *g♯*. Then this secondary 7th-chord may resolve in any manner conforming to the resolutions as found in Chapter XII.



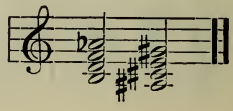
450. If the two upper tones move down by half-steps, the chord which is formed is a secondary 7th-chord on 2 of **D**; on 3 of **C**; on 6 of **G**; or on 4 of *b*. And this secondary 7th-chord may resolve in any one of the ways explained in Chapter XII.



451. If the first and fourth tones of the diminished 7th-chord move down by half-steps, the chord which is formed is a secondary 7th-chord which may be found on 2 of **F**; on 3 of **E♭**; on 6 of **B♭**; or on 4 of *d*; and this 7th-chord may resolve in any of the ways explained in Chapter XII.

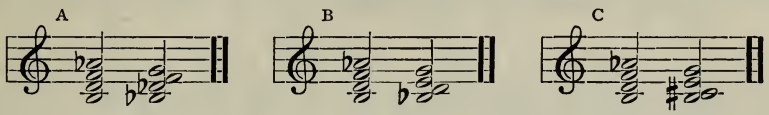


452. Again, the first, second, and third tones of the diminished 7th-chord may move down by half-steps and form a secondary 7th-



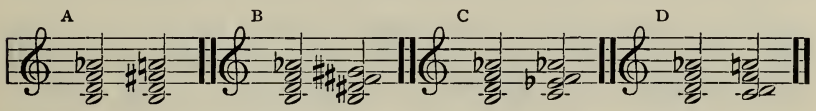
chord on 7 of **B** or 2 of *g*♯; and this chord may resolve in any of the ways explained in Chapter XII.

453. The first, second, and fourth tones of the diminished 7th-chord may move down by half-steps, as at A, and form a secondary



7th-chord on 7 of **A**♭, or on 2 of *f;* naturally, this chord may resolve by any of the methods explained in Chapter XII. The first, second, and fourth tones of the diminished 7th-chord may move down by half-steps, as at B, which forms a secondary 7th-chord on 7 of **F**, or on 2 of *d;* and this may resolve as such chords generally resolve. The second, third, and fourth tones of the diminished 7th-chord may move down half-steps, as at C, and form a secondary 7th-chord on 7 of **D**, or on 2 of *b*, which chord may resolve in the customary way.

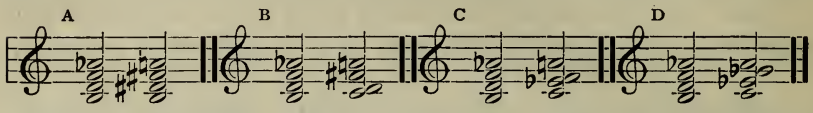
454. The two upper tones in a diminished 7th-chord may move up by half-steps, as at A, and form a secondary 7th-chord on 2 of



A; on 3 of **G**; on 6 of **D**; or on 4 of *f*♯. The two middle tones in a diminished 7th chord may move up half-steps, as at B, which forms a secondary 7th-chord on 2 of **F**♯; on 3 of **E**; on 6 of **B**; or on 4 of *d*♯. The two lower tones of a diminished 7th-chord may move up half-steps, as at C, which forms a secondary 7th-chord on 2 of **E**♭; on 3 of **D**♭; on 6 of **A**♭; or on 4 of *c*. The lowest and highest tones of a diminished 7th-chord may move up half-steps, as at D, which forms a secondary 7th-chord on 2 of **C**; on 3 of **B**♭; on 6 of **F**; or on 4 of *a*.

Any of these secondary 7th-chords may resolve in any manner explained in Chapter XII.

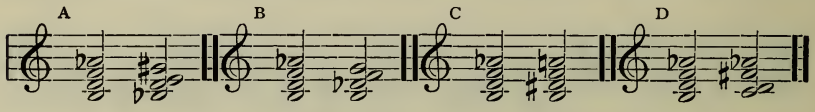
455. Again, the second, third, and fourth tones of a diminished 7th-chord may move up half-steps, as at A, which forms a dominant



7th-chord in the key of **E**, or *e*. The first, third, and fourth tones of a diminished 7th-chord may move up half-steps, as at B, which forms a dominant 7th-chord on D in the key of **G**, or *g*. The first, second, and fourth notes of a diminished 7th-chord may move up half-steps, as at C, which forms a dominant 7th-chord on F in the key of **B♭**, or *b♭*. The first, second, and fourth tones of a diminished 7th-chord may move up half-steps, as at D, which forms a dominant 7th-chord on A♭ in the key of **D♭**, or *c♯* (enharmonically).

Naturally, these dominant 7th-chords may resolve in as many ways as any dominant 7th-chord resolves, as explained in Chapters IX and XIII.

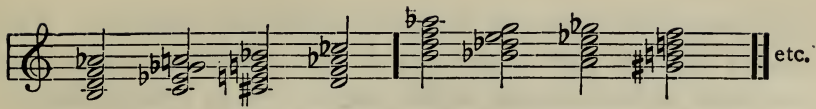
456. The first and third tones of a diminished 7th-chord may move down half-steps, as at A, which forms an **augmented sixth-**



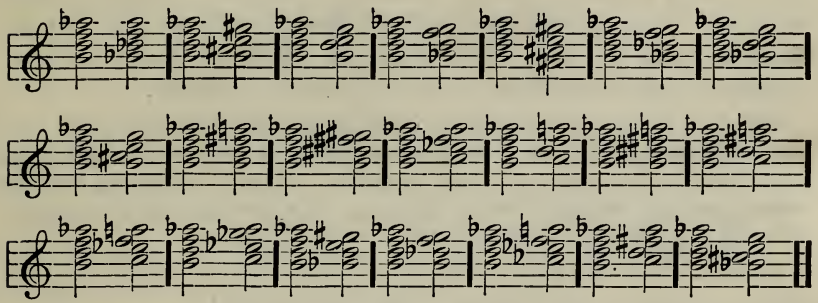
chord.[1] The second and fourth tones of the diminished 7th-chord may move down half-steps, as at B, which forms another augmented 6th-chord. The second and fourth tones in a diminished 7th-chord may move up half-steps, as at C, which forms another augmented 6th-chord. The first and third tones of a diminished 7th-chord may move up half-steps, as at D, which forms another augmented 6th-chord. These augmented 6th-chords may resolve as such chords generally resolve, as explained in Chapter XIII.

457. The diminished 7th-chords are commonly used in this manner, one succeeding another :

[1] See 550–565.



458. Thus, besides the twenty-four progressions of this one chord, as shown by the grouping in 447, we have twenty-one more, which grouped appear thus :



This gives forty-five progressions which may be used with this one diminished 7th-chord.

459. An examination of all these progressions will show that some of the diminished 7th-chords and the chords to which they progress have three tones in common ; some have two in common ; some have but one tone in common, while others have no common tone.

This interesting and wonderful chord shows very plainly the clear yet complex relations of chords and keys. See Chapter III.

An exhaustive treatment of this chord from all standpoints would require more space than can be given in a work of this character; nevertheless the author believes that he has succeeded in pointing out its possibilities as far as necessary for the student of music.

EXERCISES IN EAR-TRAINING

460. The diminished 7th-chord sounds very much like the dominant 7th, both being mild discords, yet it is not difficult to distinguish between them. In the dominant 7th-chord, a tone is heard which insists upon a skip for its resolution. There is no such tone in the diminished 7th-chord. The dominant 7th-chord

has one perfectly natural, eminently satisfactory resolution. Any one of the first eight resolutions of the diminished 7th-chord, as explained in the early part of this chapter, will be entirely satisfactory and will sound complete.

461. As stated in 428, any note of a diminished 7th-chord may move down a half-step, thus forming a dominant 7th-chord; and whatever tone moves down the half-step, becomes the strong **insistent tone,** the Root of the dominant 7th-chord which has been formed. This is true only of the diminished 7th-chord.

When a 7th-chord of any kind is played, the student should listen with great intentness; if it is not a dominant 7th-chord, let him "sing any one of its tones down" a half-step, and if this results in a dominant 7th-chord, the first chord **must** have been a diminished 7th-chord. If a dominant 7th-chord cannot be made in this manner, the chord is a secondary 7th-chord.

462. All 7th-chords which are not dominant nor diminished are termed secondary 7th-chords. (See Chapter XII.)

The diminished 7th-chord, the dominant 7th-chords, and the various kinds of secondary 7th-chords should be used in contrast, until the student can distinguish the diminished 7th-chord from the others. Use all the exercises and progressions as found in the first part of this chapter, playing them forward and backward, requiring the student to tell which tone or tones move; how far they progress, and whether up or down.

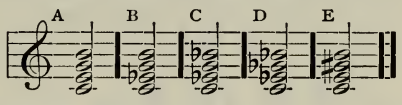
This practice should be continued until the student, being told the first chord, can tell what the progressions are.

CHAPTER XII

THE SECONDARY 7TH-CHORDS

463. As has been explained, all 7th-chords which are not dominant nor diminished 7ths are termed secondary 7ths, meaning that they are of secondary importance compared with the dominant or diminished 7ths.

The secondary 7th-chords with C as Root are five in number, and appear as in the accompanying example.



464. The 7th-chord (A) which is built of a major triad, plus a major Seventh, is found on 1 of the major scale, on 4 of the major scale, and on 6 of the normal or harmonic minor scale. It may therefore belong to the key of **C, G,** or *e*.

465. The 7th-chord (B) which is built of a minor triad, plus a major Seventh, is found only on 1 of the harmonic minor scale.

466. The 7th-chord (C) built of a minor triad, plus a minor Seventh, may be found on 2, 3 or 6 of major scales, and on 4 of the normal or harmonic minor scales, also on 1 of the normal minor scale. Thus the chord may be in **B♭, A♭ E♭,** or in *c* normal minor, in *g* harmonic or normal minor, and in *f* normal minor.

467. The 7th-chord (D) built of a diminished triad, plus a minor Seventh, is found on 7 of the major scale, or on 2 of the minor scale. Thus the chord may belong to the key of **D♭**, or to the key of *b♭*.

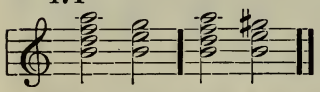
468. The 7th-chord (E) built of an augmented triad, plus a major Seventh, is found on 3 of the harmonic minor scales. Thus it belongs to the key of *a* harmonic minor.

469. The most important of these secondary 7th-chords are: the chord built of a diminished triad plus a minor Seventh, found on 7 in major, and on 2 in minor; and the chord built of a minor triad plus a minor Seventh, which is found on 2, 3, and 6 of the major scales, etc.

TREATMENT OF THE 7TH-CHORD WHICH MAY BE FOUND ON 7 IN MAJOR AND ON 2 IN MINOR KEYS

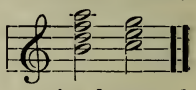
470. The ordinary resolution for all the secondary 7th-chords is the same as the normal resolution of the dominant 7th-chord; that is, the 7th-chord resolves into a common chord whose Root is a Fourth above (or a Fifth below) the Root of the 7th-chord.

471



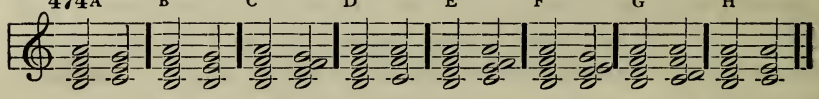
Ex. 471 is the secondary 7th-chord on B in the key of **C** or *a* normal or harmonic minor, with the normal resolution into an E-chord. Transpose into all the keys.

472. As this chord contains 4 and 7 of **C, characteristic tones,** it very commonly resolves into the tonic chord, as in the accompanying example.

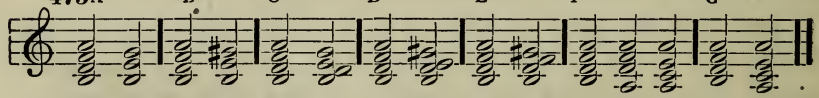


473. It is apparent that as this chord occurs in a major key and its relative minor, it is commonly used as a means of modulation — a bridge, so to speak — between these two keys.

474 A B C D E F G H



475 A B C D E F G

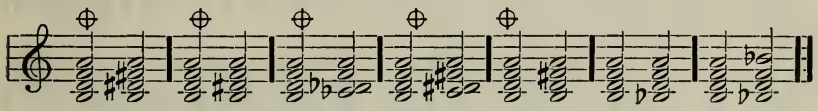


Ex. 474 is the secondary 7th-chord on 7 of **C** with several commonly used progressions in that key. Measure A shows a progression directly into the tonic chord; B into the mediant chord; C into the dominant 7th-chord; D into the sub-dominant chord; E into the secondary 7th-chord on the sub-dominant; F into the secondary 7th-chord on the mediant; G into the secondary 7th-chord on the supertonic; H into the common chord on the sub-mediant. The exercise should be transposed into all the major keys, the 7th-chord being used in the

twenty-four forms, as explained in Ex. 411. It should also be played backwards. This will show how this 7th-chord may be introduced or preceded.

Ex. 475 shows the secondary 7th-chord on B in the key of *a*, normal or harmonic minor, with its various progressions. Measure A progresses into the dominant chord on the 5 of the normal minor; B into the dominant chord in the harmonic minor; C into the 7th-chord on 5 of the normal minor; D into the dominant 7th in the harmonic minor; E into the diminished 7th-chord; F into the sub-dominant chord; G into the tonic chord directly. Play measures B, D, E, and F backwards. Measures A, C, and G are exactly like measures B, F, and H in 474. Ex. 475 should be transposed into all the minor keys, using the 7th-chords in the twenty-four forms, as explained in Ex. 411. Notice that some of these chord-progressions have three tones in common; some two; some one; and some have none.

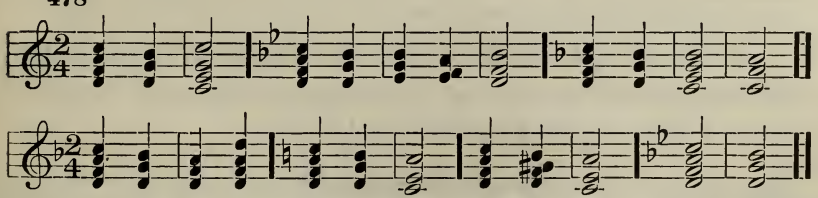
476. As modern composers are using successions of dissonant chords very freely, a few other progressions of this chord will be noted; those marked with the sign ⊕ are valuable and effective, opening many possibilities.



TREATMENT OF THE SECONDARY 7TH-CHORDS BUILT UP OF A MINOR TRIAD, PLUS A MINOR SEVENTH

477. As has been noted, this kind of a 7th-chord may belong to three major keys, and to three minor keys. Thus the chord D–F–A–C may be in **C**, **B♭**, or in **F**. It may also be found in *d* normal minor, *a* normal or harmonic minor and in *g* normal minor.

478



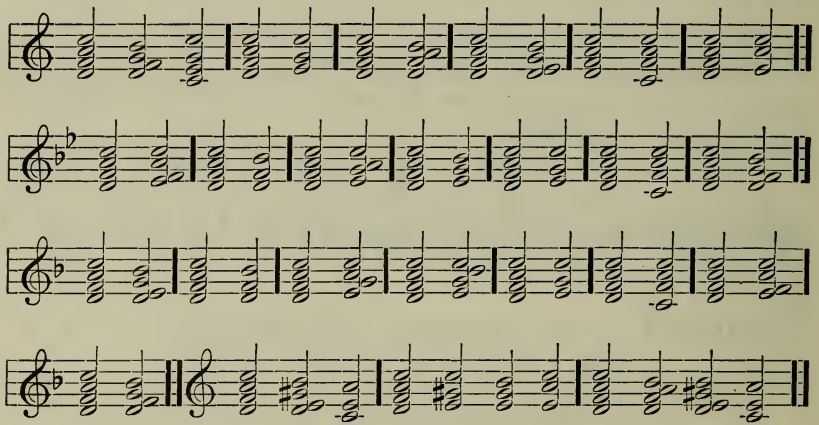
Ex. 478 shows the secondary 7th-chord on D (D–F–A–C), with the normal resolution in the various keys to which it may belong. The keys are shown by

the signatures. The 7th-chord should be used in the twenty-four forms with each resolving as in the exercise. Transpose Ex. 478 into all major and minor keys, playing the exercise at the piano.

479. It should be noticed that, no matter in which of these keys this chord appears, it does not contain simultaneously 4 and 7 (**characteristic tones**) of the key.

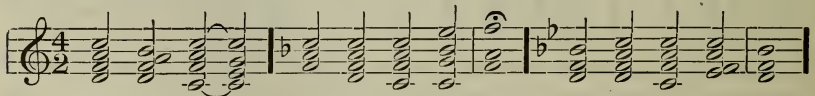
480. It is self-evident that this kind of chord may be a fertile means of modulation, as it may occur in so many keys, all more or less related.

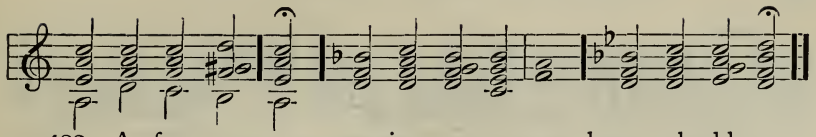
481



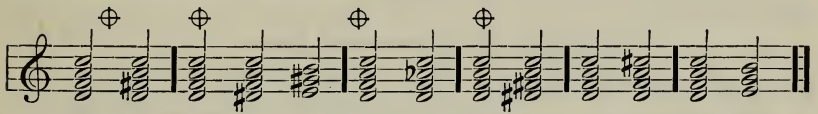
Ex. 481 shows this same secondary 7th-chord with more progressions, differing from the normal. All the successions are made of legitimate chord formations. The various resolutions of this chord in the keys of *d* normal minor, *a* normal minor and *g* normal minor will be the same as those in the related major keys. Ex. 481 should be transposed into all the major and minor keys and played in the twenty-four forms.

482. Many of these progressions are exactly the same, yet they will have different succeeding or preceding chords, and will have a different effect, according to the key; thus:



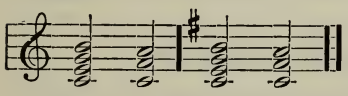


483. A few more progressions, more or less valuable, are shown. These do not conform strictly to any particular key. Those marked ⊕ are quite effective.



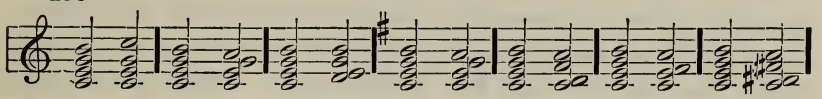
484. The secondary 7th-chord built of a major triad, plus a major Seventh, is a harsh discord, the strong dissonance being caused by the major Seventh. The chord C–E–G–B may be in **C**, **G**, *a* normal minor, or in *e* normal and harmonic minor. The ordinary resolutions of that chord in those keys appear:

485

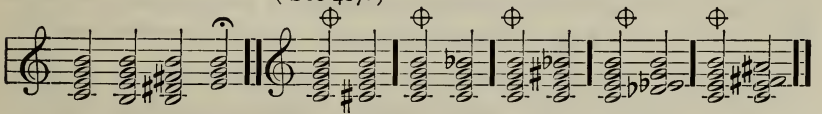


The normal resolution of this chord is not quite satisfactory just as it stands; but it may be made effective if good chords containing possibilities are used as resolution-chords.

486



(See 487.)

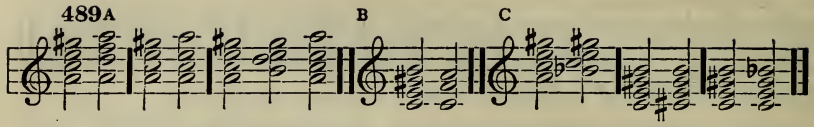


Ex. 486 shows the secondary 7th on C with various resolutions.

Exs. 485 and 486 should be transposed into all the keys, and worked out in all forms.

487. Resolutions of this chord not conforming to any particular key are shown above. Those marked ⊕ are quite effective.

488. The two remaining secondary 7th-chords, the one upon 1 and the one upon 3 in harmonic minor keys, are very harsh, and are not much used.



Ex. 489 shows the 7th-chord on 1 of *a* harmonic minor, with three possible resolutions in that key.

The ordinary resolution of the 7th-chord upon 3 of the harmonic minor key is shown at B.

490. A few additional progressions of these two 7th-chords are given at C, not conforming strictly to any one key.

491. Many of the possible progressions of these secondary 7th-chords are into augmented 6th-chords, and such progressions are very effective. For the explanation of these chords see Chapter XIII. (See also exercises 694 to 713.)

All the possibilities of these secondary 7th-chords should be studied in a practical manner at the piano, and the student who desires to compose should make numberless experiments with these chords in his apprentice work as a composer.

EAR-TRAINING FOR SECONDARY 7TH-CHORDS

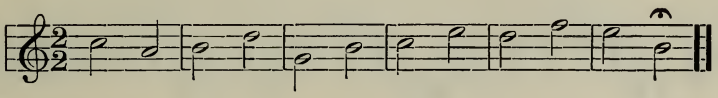
492. The only way the secondary 7th-chords may be distinguished by the ear, is by the relation of the chord to the tonic chord, or by an analysis of the intervals of which the chord is built. By this time sufficient practice with chords of different kinds and with intervals, will have sharpened the hearing, and the interval-analysis of the secondary 7th-chords will be quite easy.

493. The secondary 7th-chord on 2 of the minor or on 7 of the major scale is a very mild discord. The 7th-chord on 2 of the major scale, or any one of the many other places it can be found, is a mild discord. The 7th-chord on 1 and 4 in major, or on 6 in minor scales, is a harsh discord. The 7th-chords on 1 and on 3 in the harmonic minor scales are very harsh.

MENTAL MODULATION AND TRANSPOSITION

494. Play the notes of a major scale, skipping from note to note in a melodic manner, telling the class what scale is being

used, and let them give the name of each note as played. Now, stopping upon any note in that scale (for instance 3), which note is to be considered as 5 of a new scale or key, require the class to sing and form the new scale from that note, without the actual sounds being played at the piano. Now require the class to sing any tone in the new scale without the piano giving the new tonic. As an example begin with the **C**-scale in this manner:



Now consider the last note as 3 of the new scale; sing any note in this new scale, which is of course **G**. Now ask the class to stop upon D, 5 of **G**, and consider that tone (D) as the leading-tone of another scale. Sing any tone in this new key, which is of course **E**♭; stop upon 4 of this scale (A♭), which is now to be considered as 3 of another major scale (of course **E**). Sing any tone in this new key, finally stopping on 6, which is to be considered as 5 of another scale (of course **F**♯), etc.

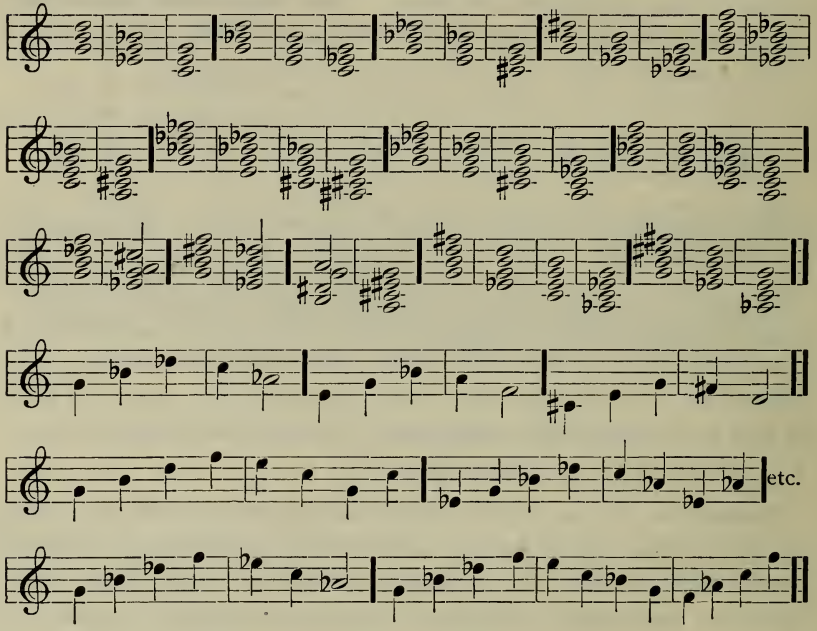
495. Use all the possible relationships, and consider each note of the scale as any degree of a new scale. Call for this kind of mental transposition into all major and minor scales, from minor to minor, from minor to major, from major to minor. Do not use syllables, but require the actual names of the notes.

496. Another method of this kind of training is: Sound any tone well within the middle register of the voice, and ask the class to make and sing a major chord which has that note as Root; sing a major chord which has that note for its Third; sing a major chord which has that note as Fifth; a minor chord which has that note as Root; a minor chord which has that note as Third; a minor chord which has that note as Fifth.

Carry out the same idea with diminished chords; with augmented chords; with dominant 7th-chords; with diminished 7th-chords; with the various kinds of secondary 7th-chords, and as

more elaborate exercises, require the common resolutions of the dissonant chords.

497. For example, if G were the tone around which the exercise was to be made, the chords would appear thus:



Carry out various progressions of all the commoner discords as shown in the preceding chapters.

This will be found a most valuable kind of training, developing an acute and discriminating sense of hearing in a short time, and will be of incalculable value in fixing the tones in the memory, a long step towards positive pitch.

Positive pitch and positive tone-memory are synonymous.

CHAPTER XIII

HARMONIC AND MELODIC PROGRESSION

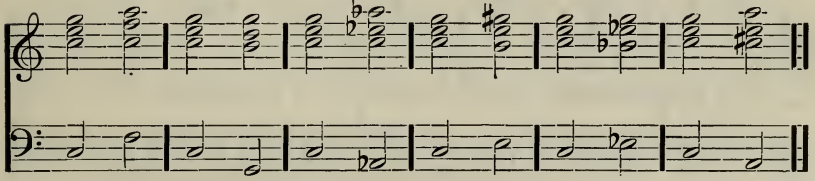
498. Any chord may be preceded or succeeded by any other chord, provided the two chords have one tone in common ; or, if no common tone exists, the succession carries out the idea of the composer.

As the ordinary possibilities of the diminished and augmented common chords have been outlined in Chapter X, it remains to show the possible successions for the major and the minor chords.

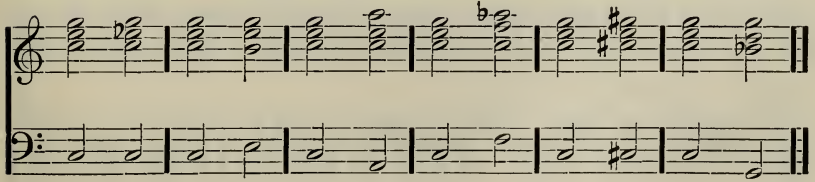
499. As an example, we will say that the C-major chord may be preceded or succeeded by any major or minor chord having a tone in common with it, or by any augmented, diminished, dominant 7th, diminished 7th, secondary 7th or augmented 6th-chord having one tone in common with the C-major chord.

We find, then, the following progressions :

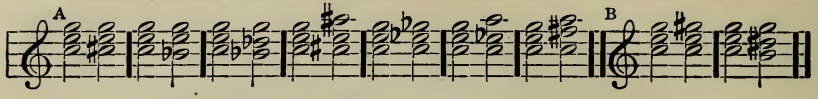
Into major chords.



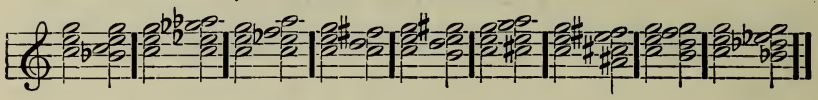
Into minor chords.



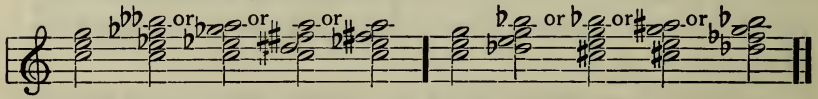
Into diminished chords as at A; into augmented chords as at B.



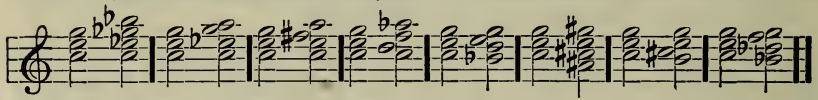
Into dominant 7th-chords.



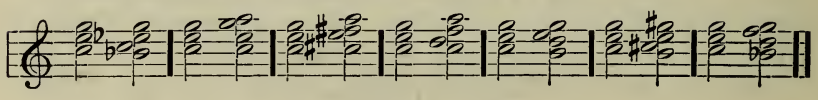
Into diminished 7th-chords.



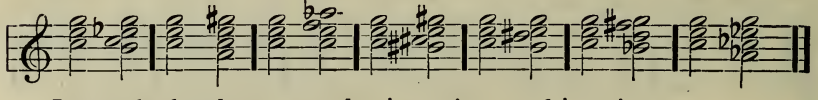
Into 7th-chords on 7 in major, or 2 in minor.



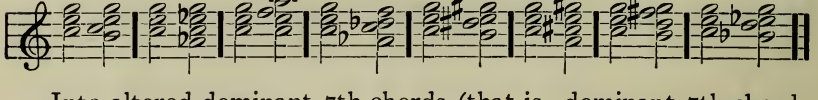
Into 7th-chords on 2, 3 or 6 in major, or 4 in minor.



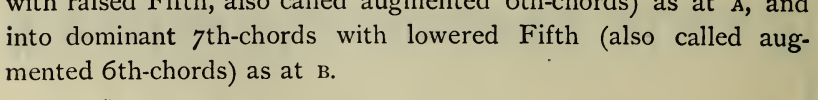
Into 7th-chords on 1 in harmonic minor.

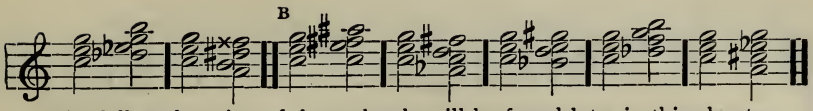


Into 7th-chords on 1 and 4 in major, or 6 in minor.



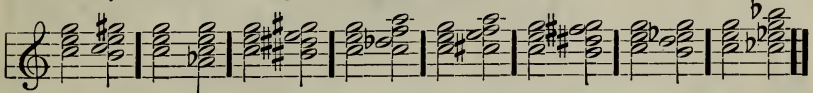
Into altered dominant 7th-chords (that is, dominant 7th-chords with raised Fifth, also called augmented 6th-chords) as at A, and into dominant 7th-chords with lowered Fifth (also called augmented 6th-chords) as at B.





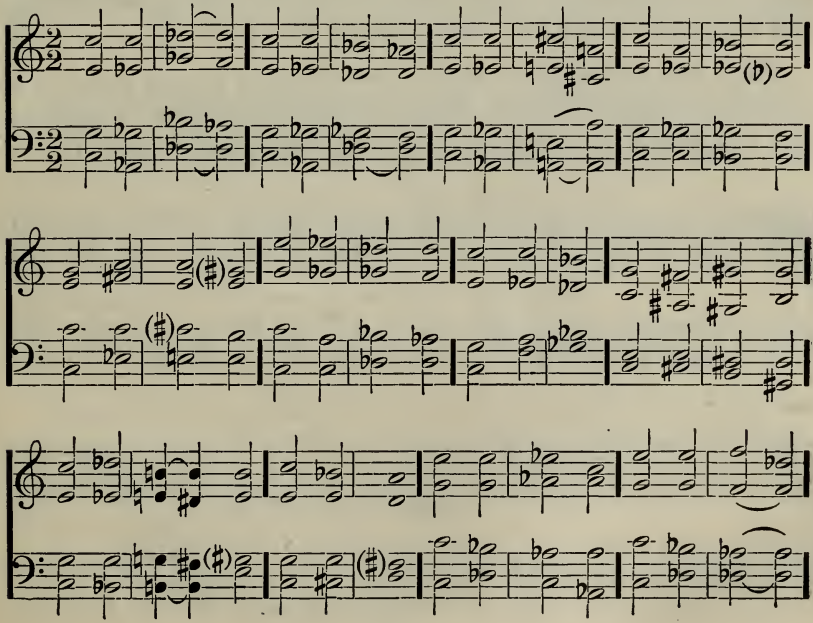
The full explanation of these chords will be found later in this chapter.

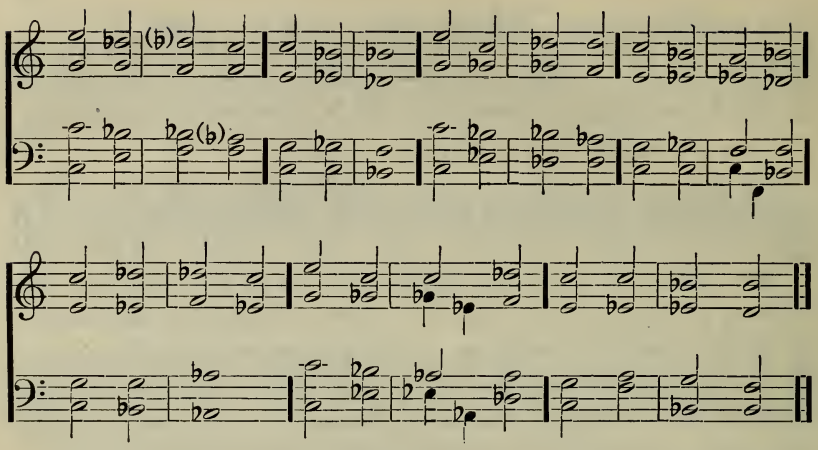
Into 7th-chords on 3 of harmonic minor.



500. Some of these progressions are harsh and seemingly forbidding, yet most of them can be made very effective and beautiful by the various resolutions of the dissonant chord into which the C-major chord progresses. Of particular value are the progressions into dominant 7th-chords, diminished 7ths, the secondary 7ths upon 7 in major or 2 in minor, and augmented 6th-chords.

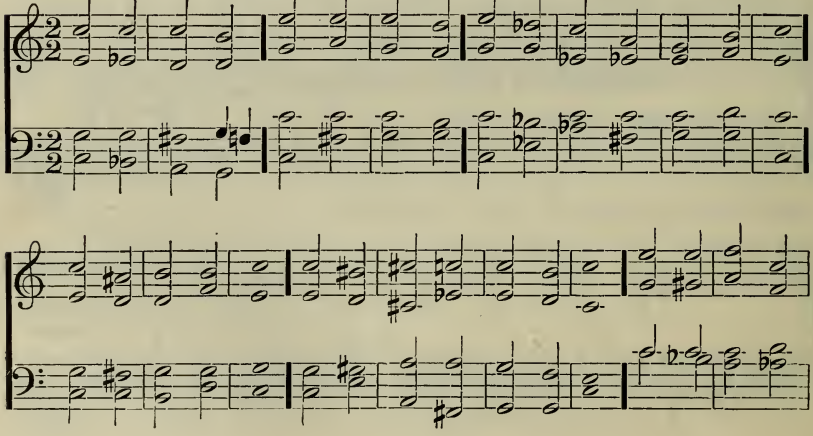
A few cases will be written out, showing various resolutions of the dissonant chord into which the C-major chord progresses.

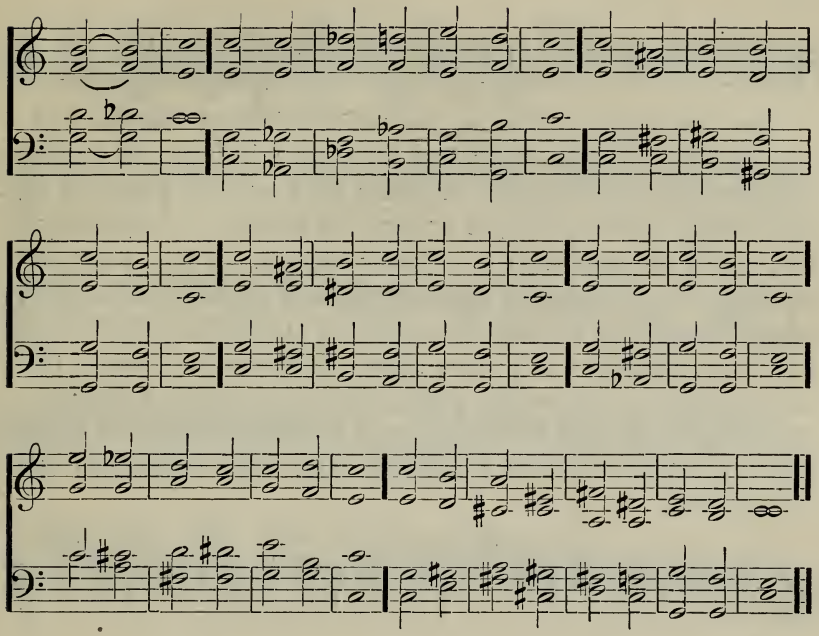




The above nineteen progressions use the dissonant chord, which is foreign to the key of **C** (into which the C-major chord progresses) as a means of modulation, each harmonic group ending in a key which is more or less related to **C.**

501. The progressions which follow use the foreign chord in a transitional manner, that is, these chords are used but momentarily, the progression going back very quickly into the key of **C.**





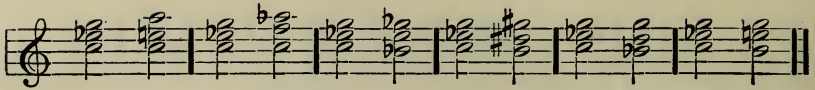
502. Any of the progressions made by the C-major chord may be used as a real modulation lasting a longer or shorter time, or they may be used in a transitional manner for interesting and beautiful effects in tone-color. (See Chapter XV.)

The student should work out all the possible progressions of each major chord, using the dissonant chords into which they may progress as transitional progressions, or as the means of permanent modulation.

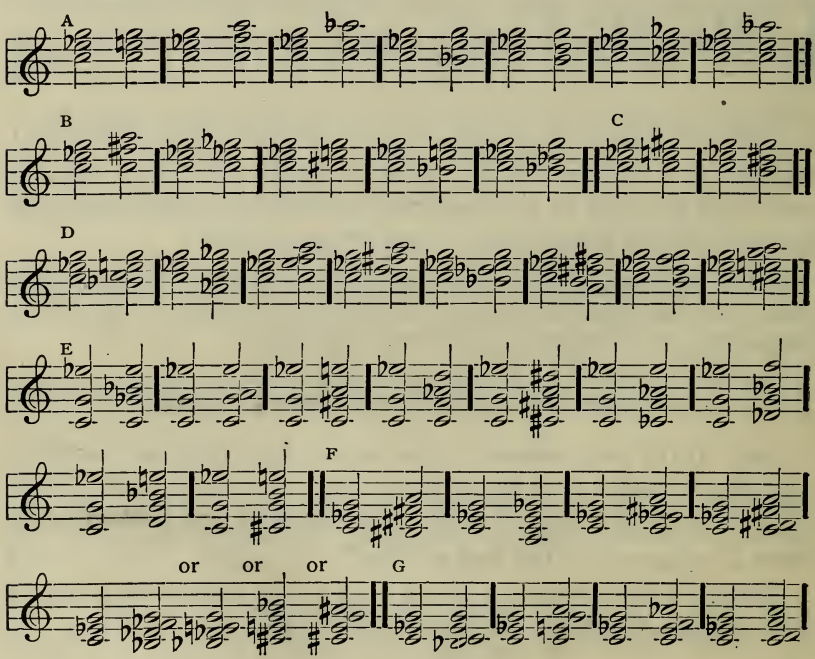
FURTHER PROGRESSIONS OF MINOR CHORDS

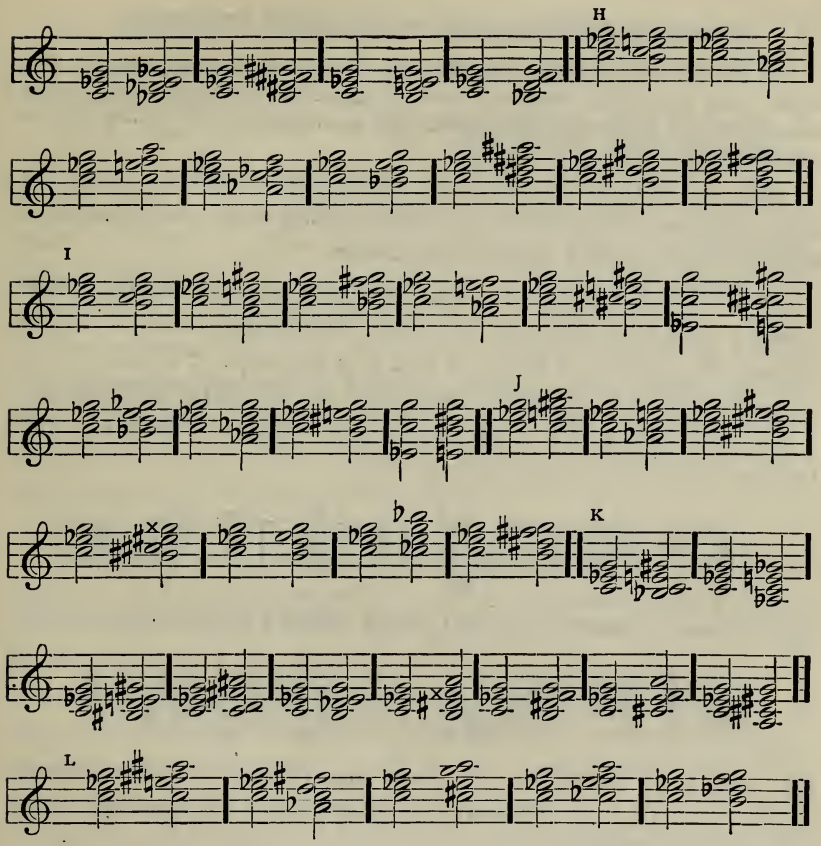
503. If the progressions of the major chord have been worked out, the possibilities of minor chords will be quite easy to determine. These progressions will be but sketched, the student using them as suggested in the major chord.

Progressions from the C-minor chord into other minor chords having a common tone, are here shown :



Also into major chords, at A; into diminished chords, at B; into augmented chords, at C; into dominant 7th-chords, at D; into secondary 7th-chords upon 2 of minor keys, or 7 of major, at E; into diminished 7th-chords, at F; into the secondary 7th-chords on 2, 3, and 6 of major, and 4 of minor keys at G; into secondary 7th-chords on 1 and 4 of major keys, or 6 of minor, at H; into the 7th-chord on 1 of harmonic minor, at I; into the 7th-chord on 3 of harmonic minor, at J; into altered dominant 7th-chords (that is, into dominant 7ths whose Fifths have been raised a half-step — also called augmented 6th-chords) at K; into dominant 7ths whose Fifths have been lowered a half-step (also called augmented 6th-chords) at L.





For the explanation of these augmented 6th-chords, see treatment under that heading later in this chapter.

504. These numerous possibilities of progression do not as yet exhaust the subject, as the major or minor chords may also progress into chords which have no common tone. All the successions which are written out above have at least one tone in common; some have two, and some three.

The student should make practical use of all the possible progressions, those without and those with common tones.

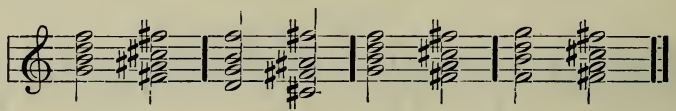
Never forget the analysis work.

FURTHER PROGRESSIONS OF DOMINANT 7TH-CHORDS

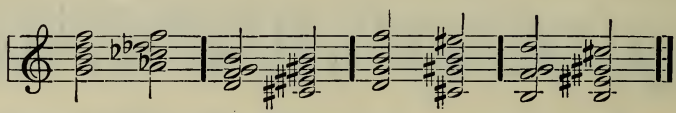
In Chapter IX the six commonly used resolutions of the dominant 7th-chord were thoroughly explained, and a number of exercises given which will enable the student to have a thorough knowledge of this chord and its connection with other chords.

505. As is the case with other chords, the possible successions are numerous, the dominant 7th-chord being used with great freedom by romantic and modern composers.

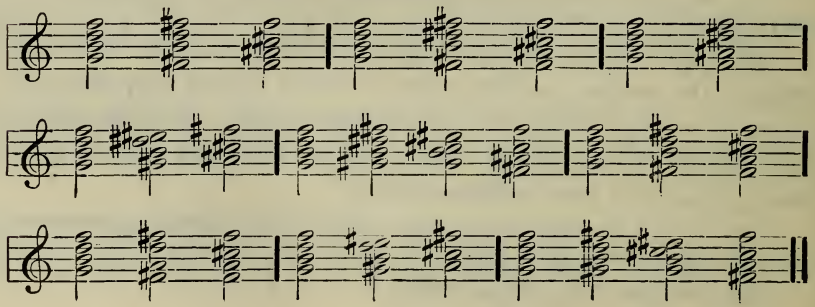
506. The dominant 7th-chord contains the two **characteristic tones,** 4 and 7, of the key to which it belongs; thus the chord G–B–D–F contains B and F, 7 and 4 in the keys of **C** and *c;* but those two tones may also be considered as the **characteristic tones,** 4 and 7 (B–E♯) in **F♯** or *f♯,* hence that dominant 7th-chord may resolve directly into these chords, thus:



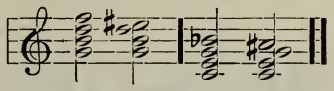
or into the dominant 7th-chord which belongs to those keys, thus:



and this new dominant 7th-chord may resolve as the composer wishes. Or the old dominant 7th may resolve into another chord in those keys, thus:



507. When the dominant 7th-chord resolves in this manner, it is frequently written with 4 and 7 of the scale (Third and Seventh of the chord) enharmonically changed to make these notes fit the key into which the chord resolves.

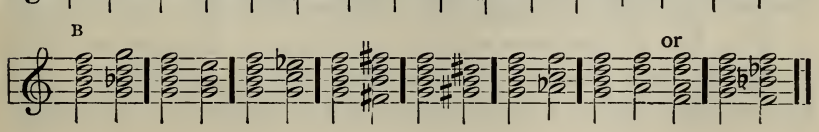


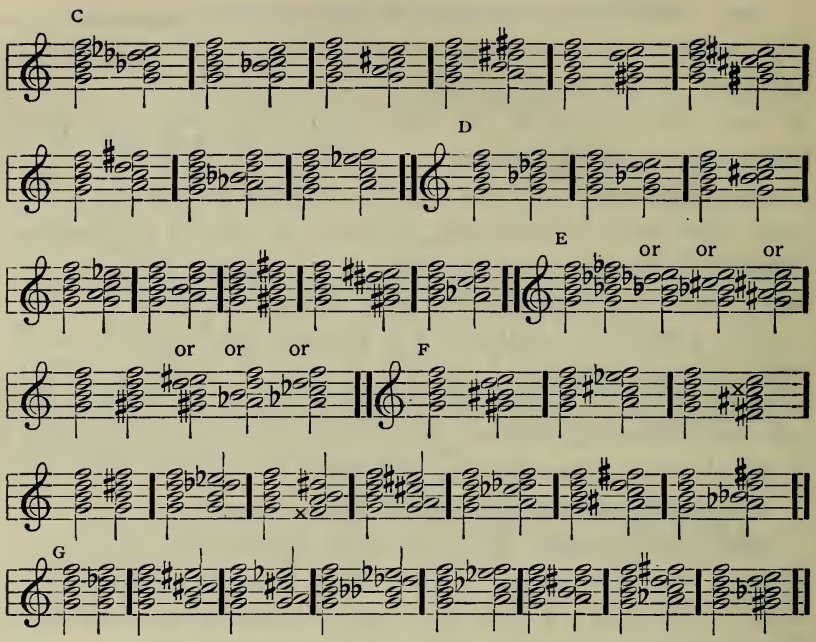
508. When this is done, the chord, which sounds and at the piano looks like the dominant 7th-chord, is termed a **three-five-augmented 6th-**chord, but in reality it is simply a dominant 7th-chord with a resolution differing from the ordinary ones.

The complicated term, three-five-augmented-6th-chord, simply means that the intervals of which it is built are a Third, a Fifth, and an augmented Sixth from the lowest tone. It really makes very little difference what the chord is called, or how it is spelled ; to the ear it is a plain dominant 7th-chord.

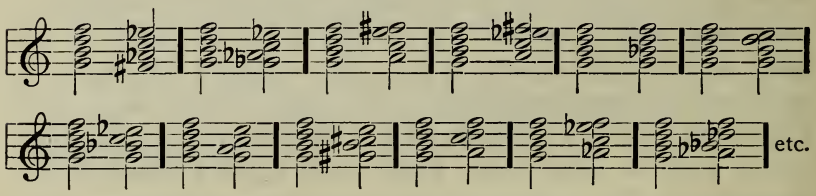
See treatment of this chord further on in this chapter.

509. The dominant 7th-chord may progress into any chord having a tone in common with it. Very commonly used progressions of this kind are those into major chords, minor chords, different dominant 7ths, diminished 7ths, secondary 7ths upon 2 in minor or 7 in major, and into augmented 6th-chords. Indicated in notes these possibilities would appear as follows : into major chords, as at A ; into minor chords, as at B ; into dominant 7th-chords, as at C ; into secondary 7th-chords on 2 in minor or 7 in major, as at D ; into diminished 7th-chords, as at E ; into altered dominant 7th-chords (that is, with raised Fifth — also called augmented 6th-chords), as at F ; into dominant 7th-chords whose Fifths have been lowered a half-step, called augmented 6th-chords, as at G.





510. A few other progressions are shown thus:



All these resolutions of the dominant 7th-chord are useful and effective, and the student should familiarize himself with them.

511. All the successions of the chord which have been here enumerated may be played forwards or backwards.

The student should work out all the possible progressions of each dominant 7th-chord in the twenty-four forms, as shown in Ex. 411.

512. The progressions which are foreign to the narrow limits of the two keys to which the dominant 7th belongs may be used as the direct means of innumerable modulations, or as mere tran-

sitions for the sake of variety in tone-color, returning very quickly into the limits of the original key.

See Chapter III, Relation of Keys.

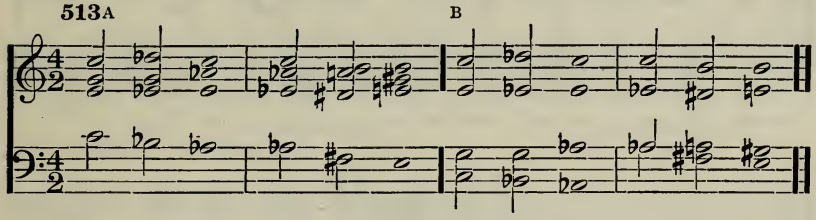
See Chapter XV, Tone-Color.

See treatment of augmented 6th-chords later in this chapter.

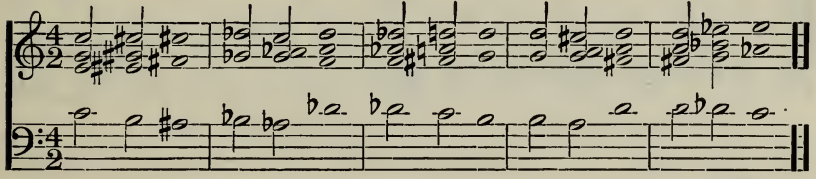
The progressions of the dominant 7th-chord into secondary 7ths, etc., are more effective and better sounding when used in open harmony.

A few exercises in which the dominant 7ths are used with more or less freedom will be indicated, the student working them out in all the possible forms, making a thorough analysis of all the progressions and resolutions, and tracing all the connecting links in the possible relations of the keys.

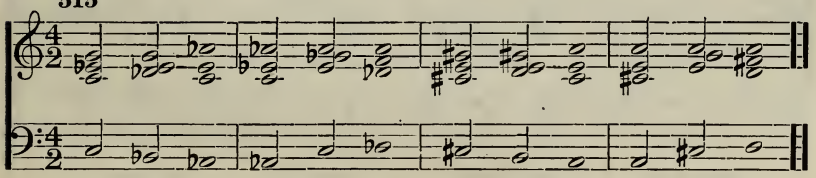
513A B



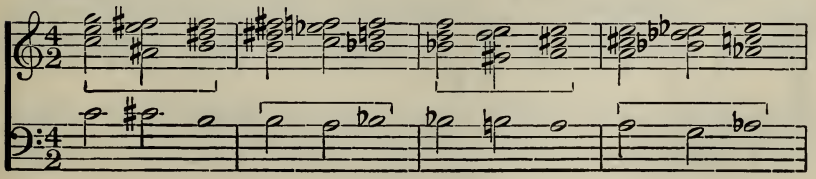
514

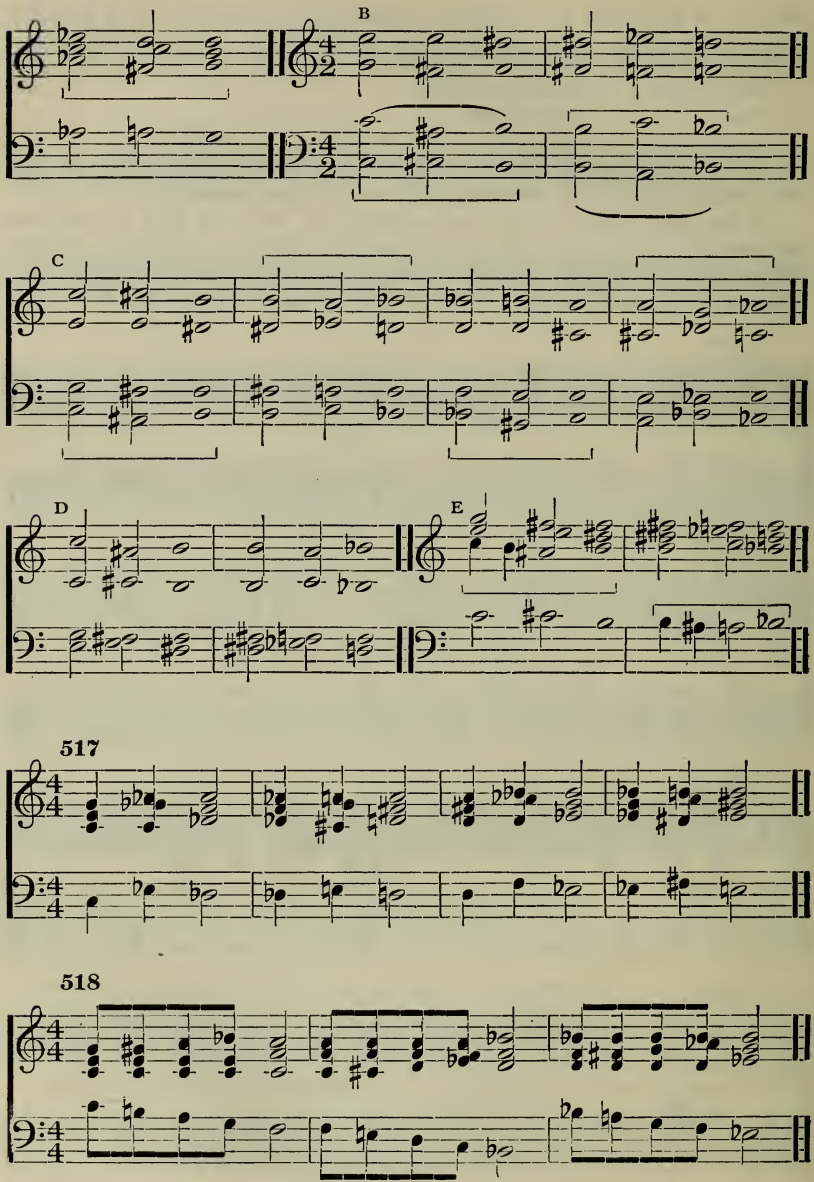


515

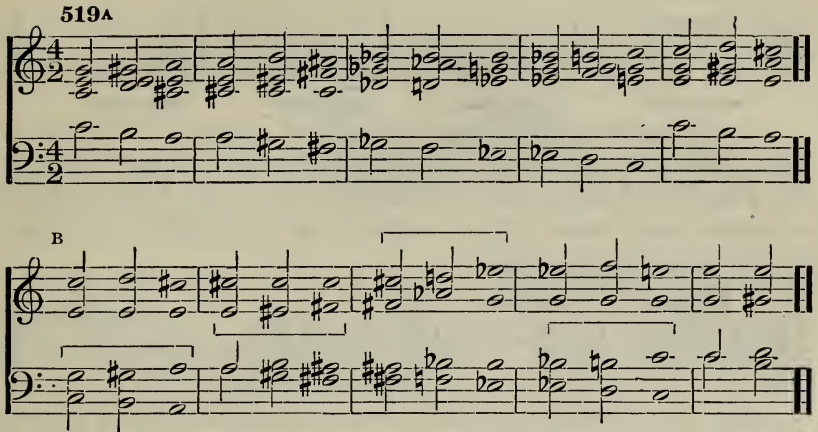


516A




B
C
D
E
517
518

519A



B

The student is to discover as many forms for each exercise as possible. The imitations are indicated by the slurs.

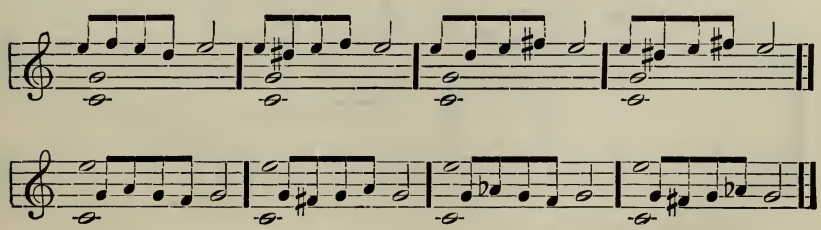
APPOGGIATURAS

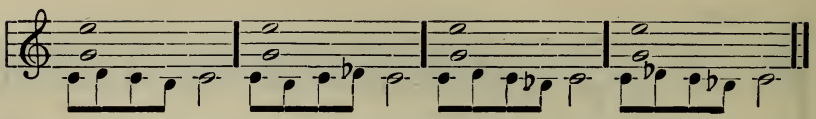
520. Each tone in a chord of any kind has two accompanying tones which may be used to embellish the plain harmonic successions.

These two accompanying tones are immediately above and below the main harmonic tone, and they may be a half or a whole-step away from the principal tone, determined by the effect which is desired.

521. These accompanying tones are termed **appoggiaturas.**

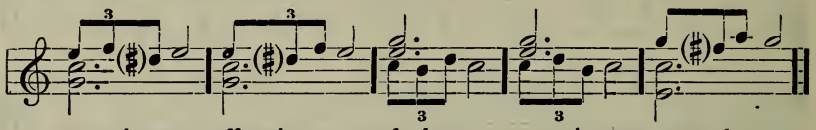
522. The appoggiaturas accompanying the tones of the C-major chords are as follows:



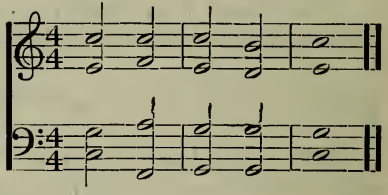


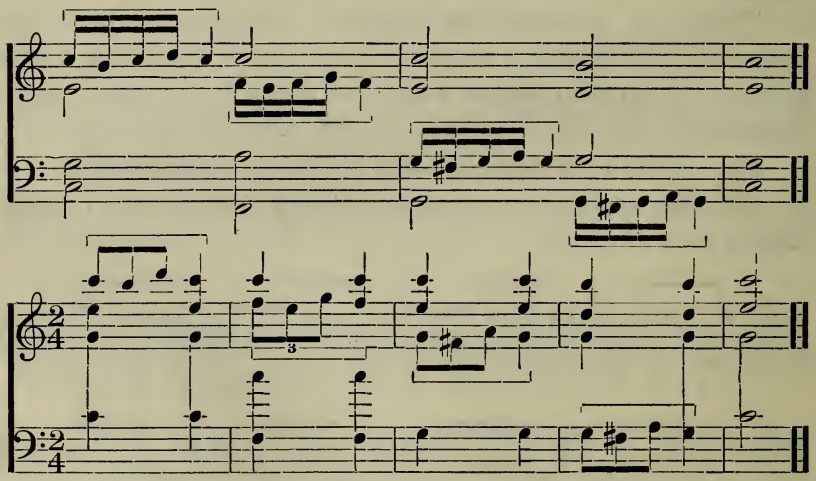
The student should play a large number of the exercises in three and four parts (found in previous chapters), embellishing them with appoggiaturas.

523. The harmony-tone (principal tone) may have the two accompanying tones played without the principal tone being heard between them, thus:

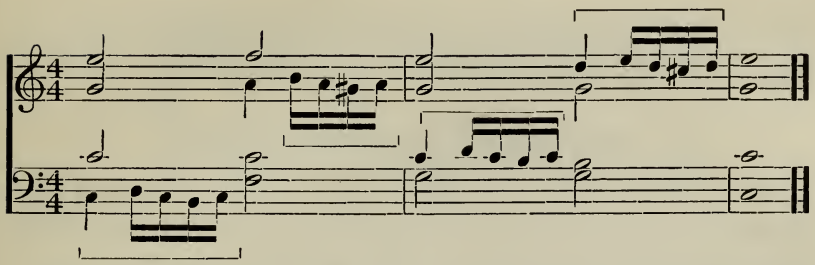


524. A very effective use of these appoggiaturas may be produced from a contrapuntal[1] treatment, one part or voice after another using the accompanying tones in imitation. Thus a very simple succession of chords, for instance the authentic cadence, may be embellished and made more interesting.

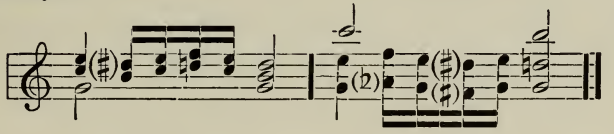




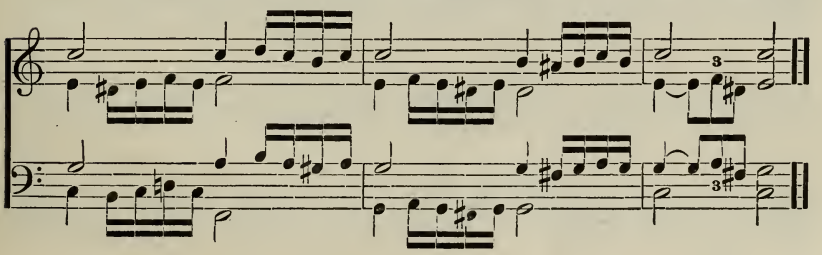
[1] See 197 and accompanying footnote.



525. Two tones of a chord may have these accompanying tones, appoggiaturas, used at the same time. Each one of these tone-combinations is a definite chord-formation; yet the amount of time consumed in playing them is so short that the ear accepts them as only embellishments around the two main chords in the scheme, C and G-major.[1]



526. The cadence with double appoggiatura might be as follows:



527. These accompanying tones are called "appoggiaturas" because they do not affect the main movements and progressions of the principal harmonic structure; and if this harmonic sub-structure is not good in itself, no amount of these or kindred embellishments can make it good.

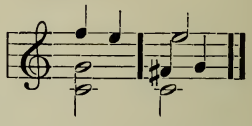
Let the young composer guard against the temptation to cover poverty of harmonic outline with embellishment. The student should use numerous

[1] See 543–549.

plain harmonic schemes (such as are found in previous chapters), using appoggiaturas for various embellishments, working for the effect of contrapuntal imitations as shown in 524 and 526.

SUSPENSIONS AND ANTICIPATIONS

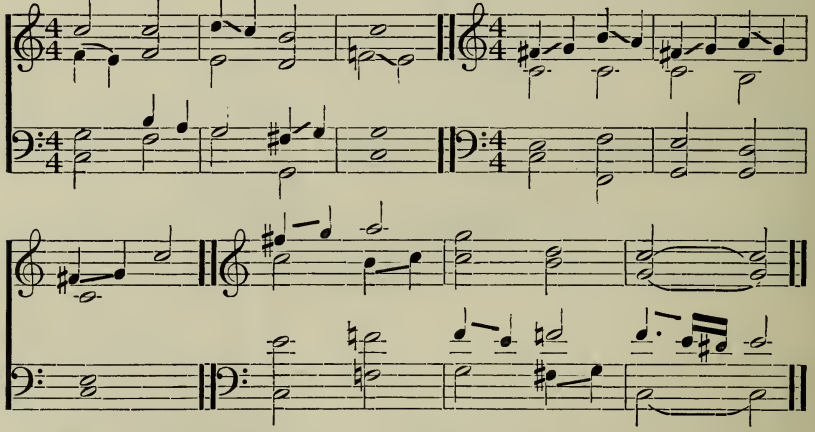
528. When a tone of a chord is held back by another tone which is foreign to the chord, or foreign to the principal harmonic structure, that foreign tone is called a **suspension**; that is, the tone which one would naturally expect to hear is held back by a tone (one of the appoggiaturas) above or below it.



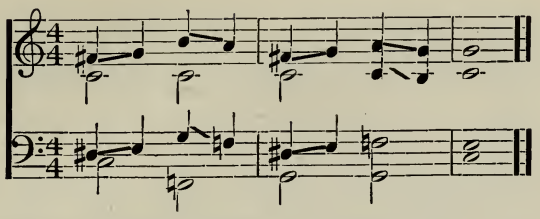
In the first measure the F holds back E, the Third of the C-chord, and in the second measure the F♯ holds back G, the Fifth of the C-chord.

529. The suspension must occur on the beat, and must be a dissonance. Most of the apparent exceptions to this statement are really cases of displacement of the chief accent.

The authentic cadence written with suspensions appears thus:

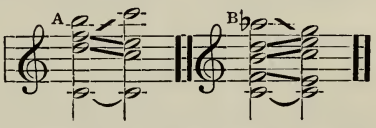


530. Suspensions may be: single, one note held back, as above; double, two notes held back; triple, three notes held back; or even quadruple, four notes being held back. Examples of double, triple, and quadruple suspensions are shown on the next page.



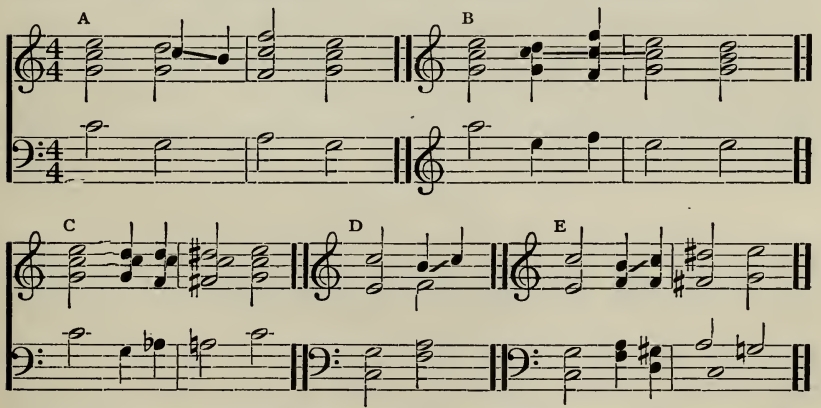
In the soprano in the first measure, the F♯ holds back G, and the B holds back A; while in the tenor the D♯ holds back E, and the G holds back F. In the second measure, in the soprano the F♯ holds back G, and the A holds back G; in the same measure the D♯ holds back E in the tenor, and in the alto the C holds back B.

At A we have a triple suspension; B in the soprano holds back C; F in the alto holds back E; and D in the tenor holds back C, — a triple suspension because three foreign tones hold back three legitimate tones.



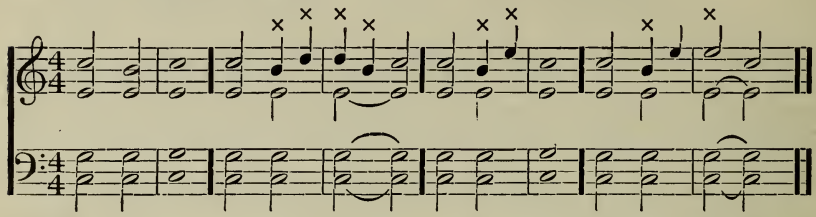
At B we have a quadruple suspension, because four tones of the C-chord are held back by four foreign (appoggiatura) tones; thus A♭ holds back G; D holds back E; B holds back C; and F holds back E.

531. Very frequently, the composer, instead of resolving the suspended tones in the way that seems most natural, introduces another chord containing that tone; instead of A, we find B or C.



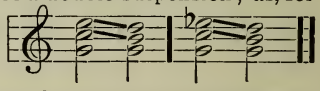
532. Sometimes the suspensions resolve as would be expected, but the chord changes; thus, instead of D, we find E.

533. Another common use of the suspension is to cause the suspending tone to skip to another of the accompanying tones (appoggiaturas); or to a tone of the real chord which is different from the natural resolution, generally returning to that more natural resolvent tone, thus:



534. A large number of suspension effects look and sound like (and indeed are) definite chord-forms; yet they are treated as suspension-chords because they do not progress as the chord-forms would, were they heard under circumstances of a different character. See "Passing Chords."

The second inversion of major and minor chords (6–4-chords), when they occur on the beat, have unmistakably the effect of a double suspension; as, for instance, in the accompanying example, the E or E♭ holds back D, and the C holds back B.

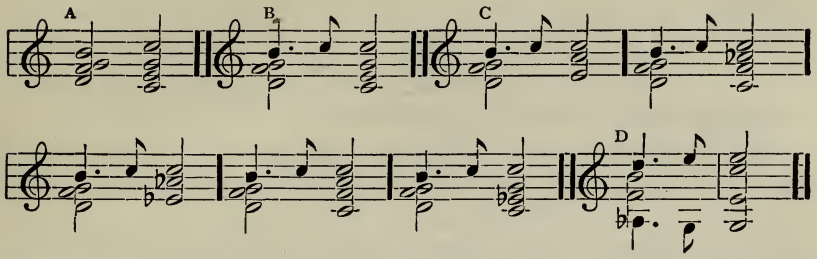


The student should use the numerous exercises found in previous chapters, embellishing them by the use of suspensions in the ways herein explained.

As with all the other details of harmonic study, the student should carefully examine numerous compositions by the masters, to discover how they have used these particular details of the Art, and then he should do much experimental writing as apprentice-work.

ANTICIPATIONS

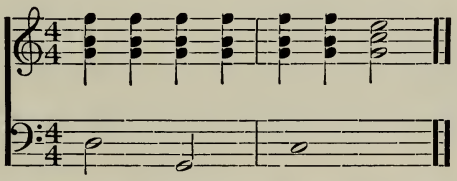
535. Anticipation occurs when one tone of a dissonant chord resolves into one of the tones of the consonant chord into which the whole dissonant chord will eventually resolve, this single tone resolving before the other tones of the dissonant chord; D–F–G–B the dominant 7th-chord on G, in second inversion, would commonly resolve directly into the C-major chord as at A, but B might resolve before the other tones, "anticipating" the next chord as at B.



536. Naturally the dominant 7th-chord may resolve into any chord that contains the "anticipating" tone as at C.

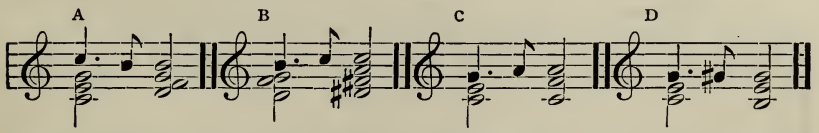
537. More than one tone may be anticipated, as at D.

538. Frequently an anticipation and a suspension are exactly alike; thus:



In the second measure the bass note C may be considered as an anticipation of the C-major chord into which the dominant 7th will resolve; or the whole second measure may be considered as the C-major chord with a double suspension; the F holding back E, and the B holding back C.

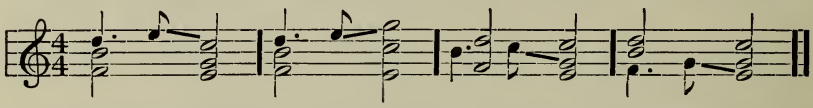
539. These progressions or anticipations may be reversed, one tone of a dissonant chord, into which a consonant chord is to progress, being heard before the full chord as at A; or when two dissonant chords succeed each other as at B.



540. When two consonant chords succeed each other, anticipations are not very effective, unless the anticipating tone forms a dissonance. Thus, the passage at C, above, is not very effective, because it is merely a series of three simple consonant chords; but D

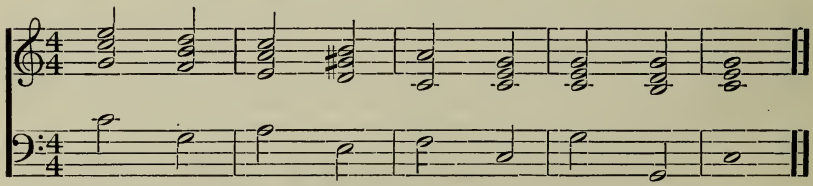
is better, as the G♯ does not accord with the C-major chord. Nevertheless, anticipations between consonant chords, even though no dissonance is used, are quite commonly met. They have nearly always the effect of syncopations.[1]

541. Sometimes the anticipating tone does not remain where we should naturally expect it to remain, but goes to another tone:

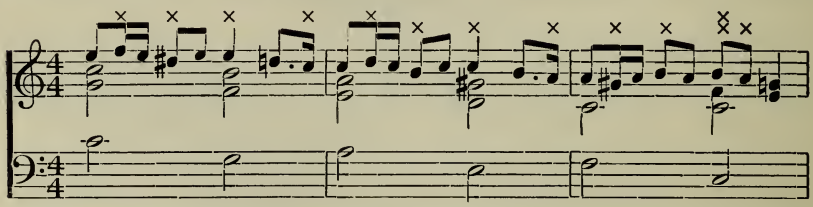


The student should use a number of the exercises found in previous chapters, adding anticipations as a new embellishment.

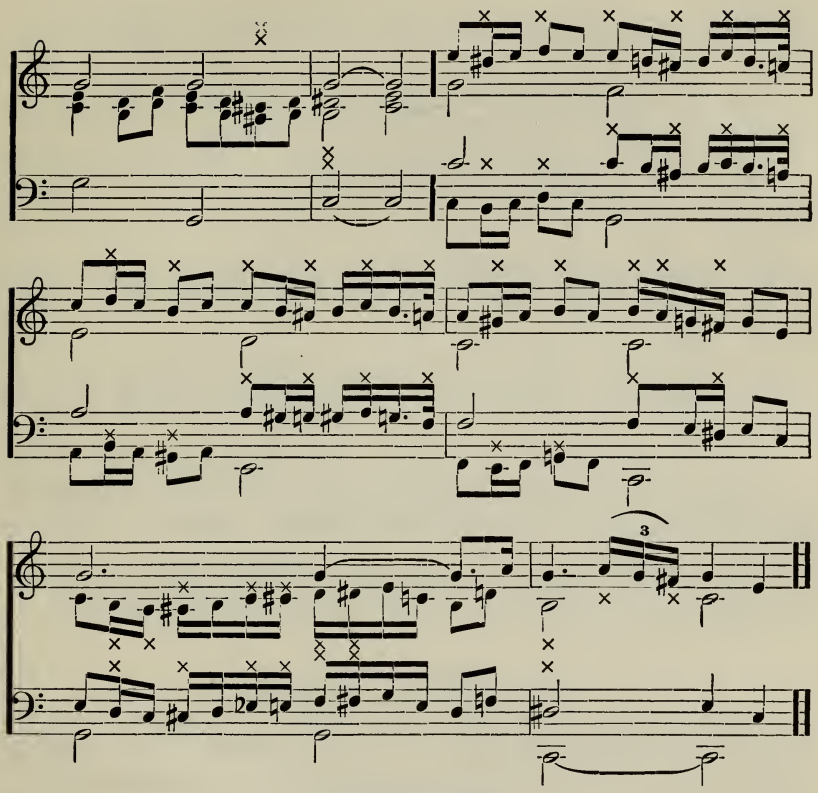
542. It is self-evident that appoggiaturas, suspensions, and anticipations (as well as passing-tones) are very much alike; and a simple harmonic scheme may be made very effective, embellished by these graces, all being used within the compass of a few measures. Thus the simple chord successions may be made more interesting by single and double suspensions, appoggiaturas, and anticipations:



The appoggiaturas, suspensions, and anticipations are marked with the sign x. Play slowly.



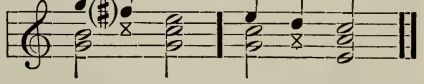
[1] "Syncopation" is the transferring of an accent from a regularly accented beat to another. In 4-4 time this would put the accent on the second or fourth beat. In 3-4 time the accent is transferred from the first to the second or the third beat, etc.



PASSING-TONES

543. Another simple form of embellishment is the "passing-tone," made from these same accompanying or appoggiatura tones, used in a slightly different manner.

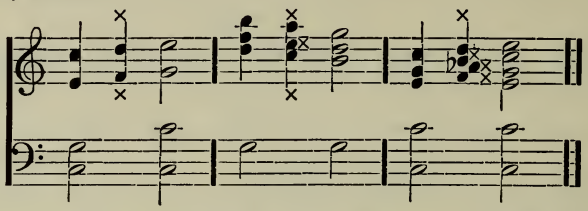
544. Instead of going directly from one chord into another, the composer introduces tones foreign to the harmonic scheme. Through these tones he "passes" in going from one chord into the next. Thus, in the first measure F♯ is a passing-tone between G and E, which tones belong to the harmonic schemes of G major and C major. In the



second measure D is a passing-tone between E and D, which two tones belong to the harmonic scheme of C–*a*.

545. Passing-tones are very similar to suspensions, but do not come on the accent, as is the case with suspensions.

546. Two, three, and even four passing-tones may occur simultaneously; thus:



547. Nearly always, when two or more passing-tones are used at the same time, definite chord-formations result, **but, like single passing-tones, they do not affect the harmonic outline.**

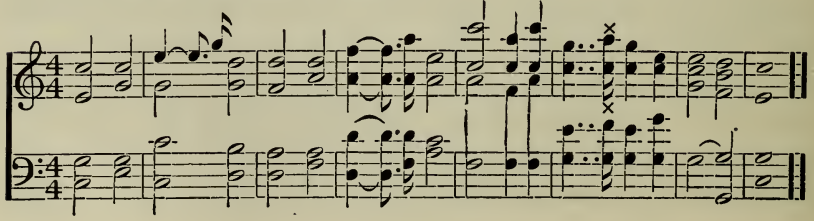
548. Definite chord-formations which result from several passing-tones being heard simultaneously are termed passing-chords.

PASSING-CHORDS

549. We may pass from one chord of the main harmonic scheme into another, through a "passing-chord." Any kind of chord, consonant or dissonant, may be used as a passing-chord.

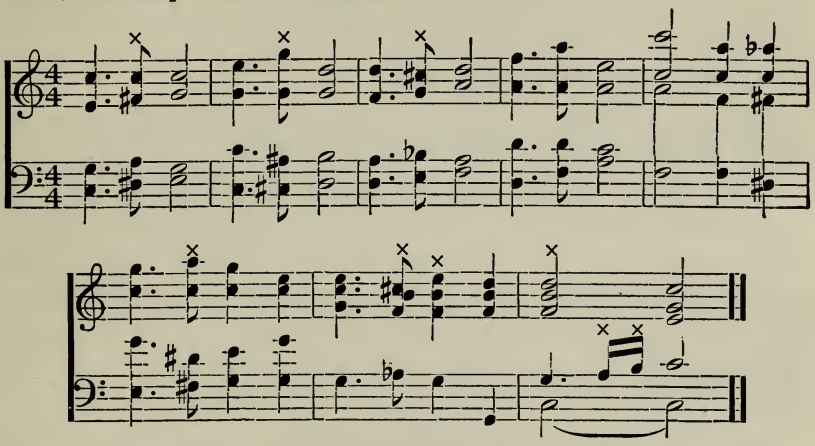
As has been explained, this happens when the passing-chord is not an integral part of the main harmonic outline, or when a foreign chord is used which has a remote relation to the main keys or tonalities.

Thus in the harmonic scheme,



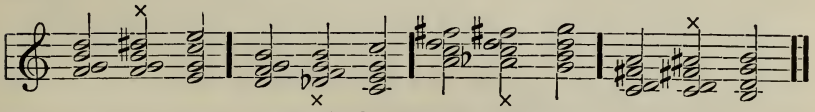
all are simple chords, with only two appoggiaturas, which are marked with the sign x.

This simple succession of only six different chords will be now embellished by passing-chords; but the general harmonic scheme will be kept intact. The passing-tones, passing-chords, anticipations, and suspensions are marked with the sign x.



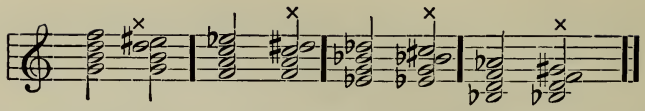
AUGMENTED SIXTH-CHORDS

550. The dominant 7th-chord has these same accompanying tones (appoggiaturas) around each of its constituent tones. When the Fifth of the dominant 7th-chord uses a passing-tone or appoggiatura which is either a half-step above or below, thus:

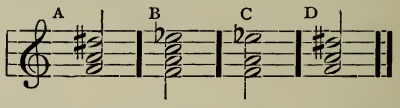


very valuable and beautiful **altered dominant** 7th-chords are formed which are termed **augmented** 6th-chords.

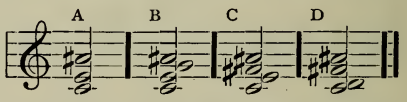
551. Another of these augmented 6th-chords is produced when the names of the tones in the dominant 7th-chord are changed so as to reverse the relations of the Third and Seventh of the chord, as 7 and 4 of the scale, into 4 and 7 of another scale; thus:



552. Another form of augmented 6th-chord which is sometimes used, is the enharmonically changed dominant 7th with the Fifth left out. Thus A is produced from B by changing C into D.



553. The common forms of these chords, grouped, appear as in the accompanying example.



554. These derived chords are called augmented 6th-chords because they are most commonly used in a manner which causes one of the higher notes to form an interval of an augmented Sixth with the lowest tone, as shown in the examples above. Nevertheless, these chords are used in many forms by composers, the augmented Sixth or its inversion appearing somewhere in the chord.

555. Like legitimate chord-formations, these intervals are named from the intervals within the chord. Thus the chord in measure A (553–4) is called the "Three-Augmented-6th-Chord"; the chord in measure B is called the "Three-Five-Augmented 6th-Chord"; the chord in measure C is called the "Three-Augmented-Four-Augmented-6th-Chord"; and the chord in measure D is called the "Two-Augmented-Four-Augmented-6th-Chord."

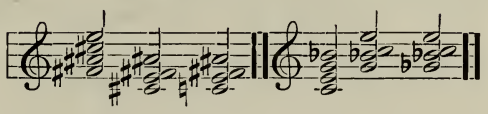
556. It makes no material difference what these chords are called nor how they are spelled; their effect in sound is the thing that is of real importance.

The augmented 6th-chords in measures A and B have been explained in 506, 507, 508. The chord in measure D generally resolves directly into the tonic chord of G, though it may resolve as freely as the unaltered dominant 7th. See Caption, Further Use of Dominant 7th-Chords.

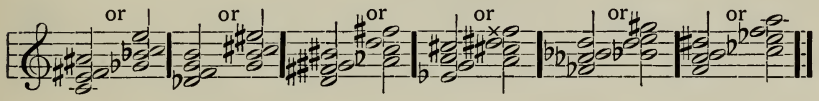
557. The chord in measure C is the most important of these augmented 6th-chords, on account of its peculiar construction;

when analyzed, it is found to contain two augmented Fourths (or diminished Fifths).

It may be regarded as the altered dominant 7th on F♯, or the altered dominant 7th on C.

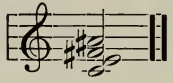


For this reason there are but six of these chords which sound differently. Expressed in notes, they appear:



558. Again, the peculiar construction of this chord gives many possibilities for valuable chord-progressions.

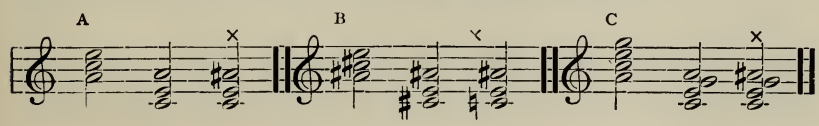
559. Each pair of augmented Fourths may be regarded as 4 and 7, or 7 and 4 (**characteristic tones**) of different keys. For instance, this chord on C contains 4 and 7 (C–F♯) of the key of **G** or *g;* also 7 and 4 (C–G♭) of **D♭** or *d♭*. It also contains 4 and 7 (E–A♯) of **B** or *b;* and 7 and 4 (E–B♭) of **F** or *f*.

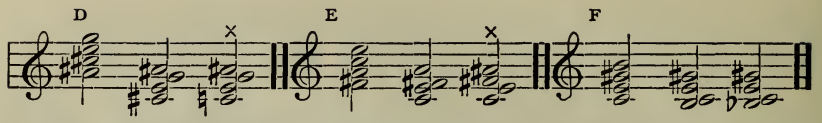


Naturally, therefore, the chord may resolve into the tonic chord in any of these keys, or it may resolve as freely as the unaltered dominant 7ths from which it may be derived.

This chord is similar to the diminished 7th-chord, as it also contains two augmented Fourths or diminished Fifths.

560. These augmented 6th-chords may be derived from other chords that are not dominant 7ths; thus the three-augmented-6th-chord may be derived from the first inversion of a minor chord, with the Root of that minor chord raised a half-step as at A; or it may be derived from the first inversion of a diminished chord, with the Third lowered a half-step, as at B.





561. The three-five-augmented-6th-chord may be derived from a secondary 7th-chord on 3 or 6 of a scale, the chord in first inversion with the Root raised a half-step, as at c; or it may be derived from the first inversion of a diminished 7th-chord, with the Third lowered a half-step, as at D.

562. The three-augmented-four-augmented-6th-chord may be derived from a secondary 7th-chord on 7 of the major key, in second inversion, with the Third raised a half-step, as at E.

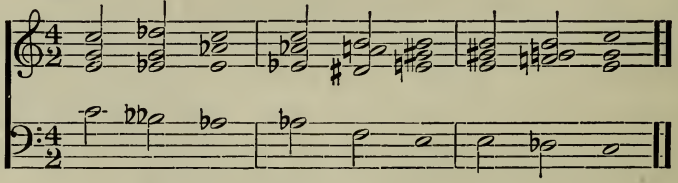
563. The two-augmented-four-augmented-6th-chord may be derived from a secondary 7th-chord on 3 of harmonic minor, in third inversion, with the Seventh lowered a half-step, as at F.

564. Chords which may be slightly altered, resulting in these augmented 6th-chords, are seen to be numerous; hence these chords are as fruitful a means of modulation as the dominant 7ths.

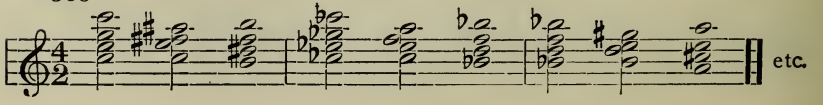
Review the earlier part of this chapter, upon the Further Use of Dominant 7th-chords, the chapter upon Diminished 7th-chords, and the chapter upon Secondary 7th-chords.

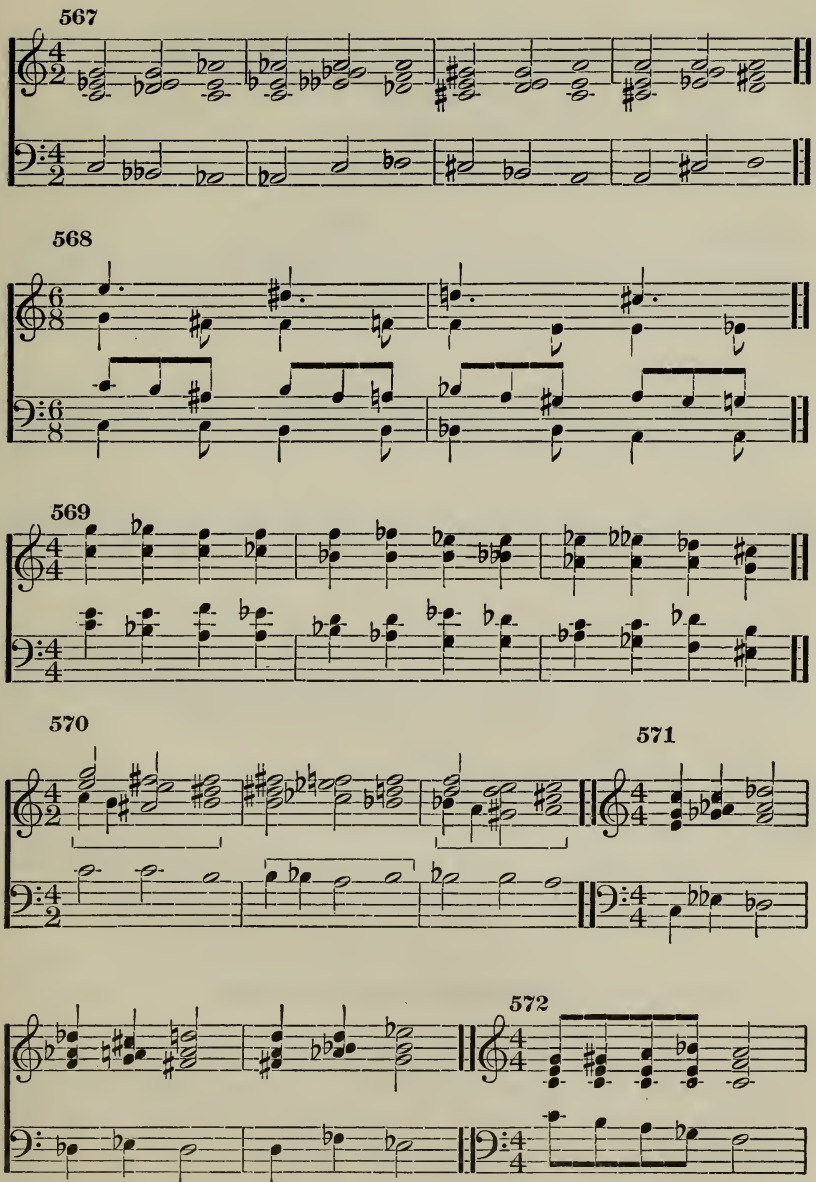
A few exercises using these chords are now introduced. These are to be finished in as many forms as possible. They are to be played until the chord becomes entirely familiar, so that the student may begin upon any chord and carry out the successions from that point.

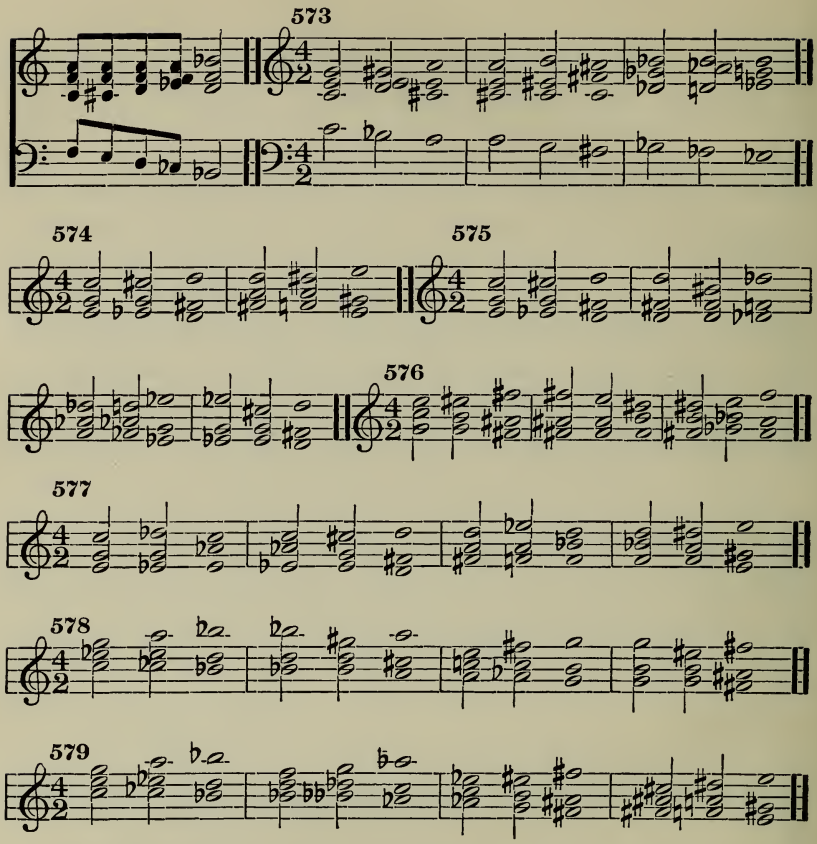
565



566



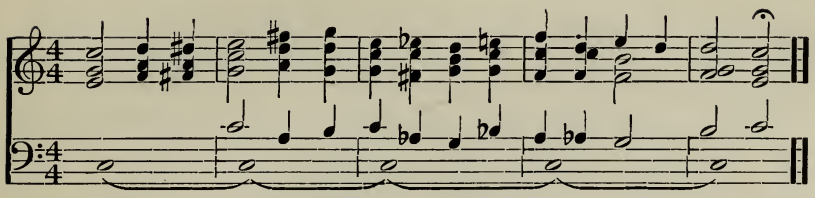

567
568
569
570
571
572



Under the Caption "Further Development of Leading-Tone and Dominant Relation" will be found another explanation of the derivation of these augmented 6th-chords.

ORGAN-POINT OR PEDAL-POINT

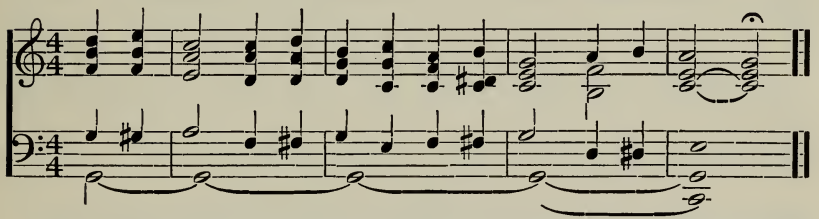
580. The organ-point is so called as it probably originated in organ music; the player holding down one tone with a pedal key, while allowing the harmonic progressions to proceed with but slight relation to that sustained tone, thus:



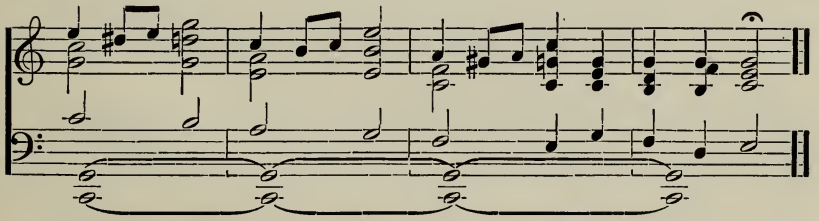
The above is a tonic organ-point on C; some of the chords have the sustained tone (C) as a part of their construction, while other of the chords may be regarded as passing-chords.

The organ-point is usually built on the tonic note as the sustained tone, or on the dominant as the pedal-point.

581. Following is an example of a dominant organ-point:



582. Sometimes the tonic and dominant are sustained together; thus:



583. The lowest tone of the chords, not counting the sustained tone or tones, is generally considered as the "bass" note, the chord being reckoned or measured from that tone upwards.

584. In an organ-point passage, the passing-chords should not be too foreign to the sustained tone, nor should many such foreign chords be used consecutively.

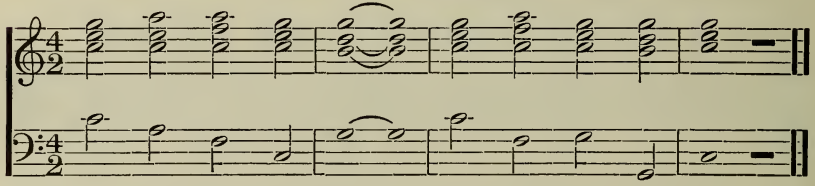
For examples of pedal-points, see the last six measures in the Introduction of the Second Symphony, by Beethoven; the Chopin Berceuse, for

piano solo; the "Lullaby" from the "Songs Without Words," by Mendelssohn; ending of the Scherzo of the Fifth Symphony, Beethoven; Schumann Op. 60, No. 1; Brahms, Op. 117, No. 1; end of Slow Movement, Op. 19, No. 3, Beethoven.

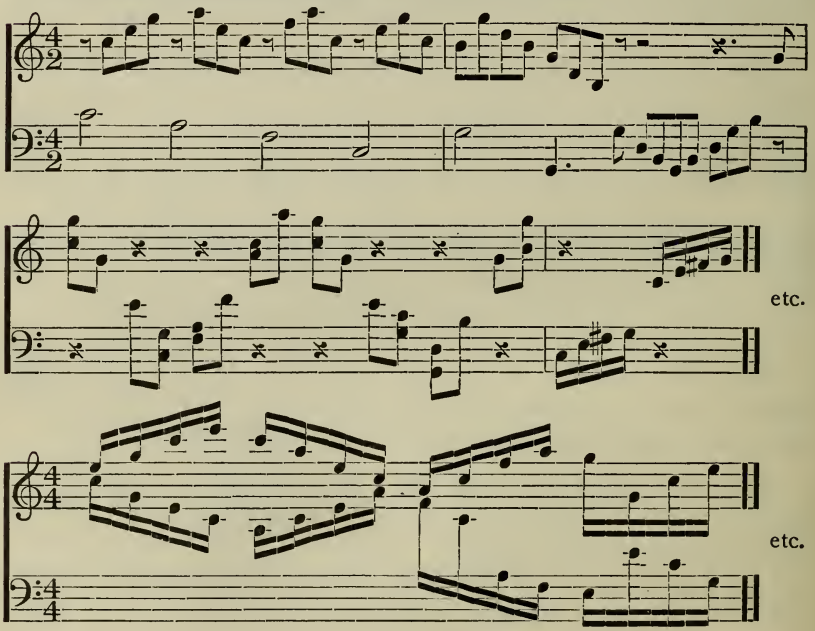
When the sustained note occurs in an upper part, it is called a Sustained Tone.

HARMONIC FIGURATION

585. Harmonic figuration is nothing more nor less than the breaking up of solid harmonic masses in a melodic manner, playing one or more notes at a time; thus:



The above succession may be broken up thus:



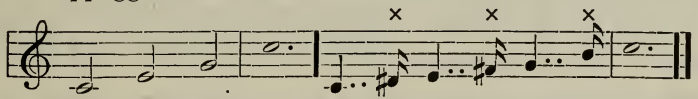
A harmonic outline may be broken up in countless ways without any relation to strict four-part harmony.

The student should use numerous exercises in the book, breaking up the solid harmonic masses into many kinds of harmonic figurations.

FURTHER DEVELOPMENT OF LEADING-TONE RELATION

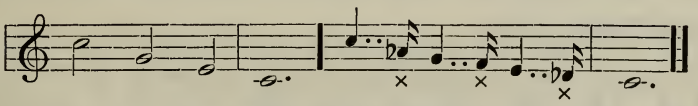
586. Every tone in a chord may be said to have two leading-tones, the half-step below (which would be the upward-tending leading-tone), and the half-step above (which would be the downward-tending leading-tone).

The C-major chord may be embellished by the accompanying tones or appoggiaturas; thus:



And these appoggiaturas have the effect of leading-tones, the F♯ to G; the D♯ to E; and the B to C.

587. The appoggiatura tones which are a half-step above the principal chord-tones have a similar effect; thus:

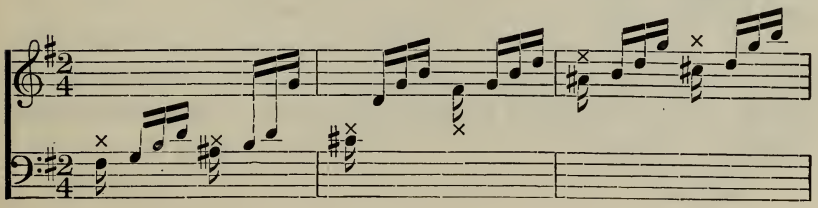


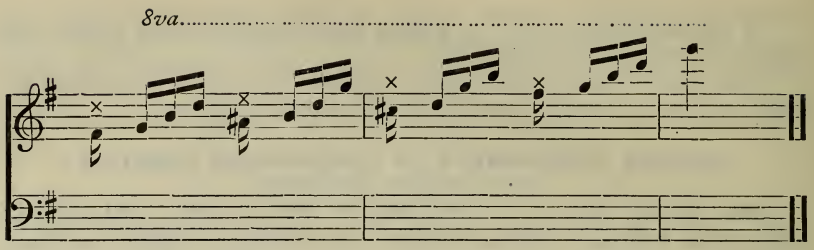
The A♭ is a downward-tending leading-tone to G; the F a downward-tending leading-tone to E; and the D♭ a downward-tending leading-tone to C.

588. These leading-tone effects occur quite frequently, and they may be long or short, and on the beat or not.

The following example will suffice.

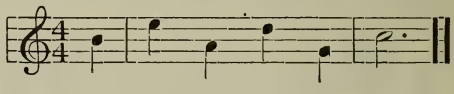
RAFF, "Fabliau."



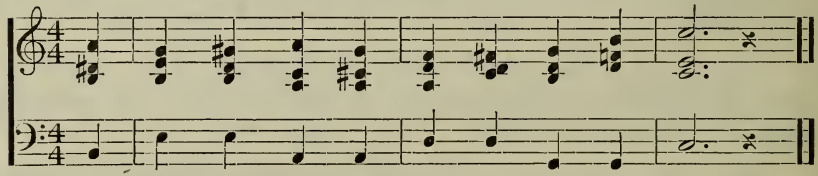


DOMINANT RELATIONS

589. Each tone in a key may have its dominant tone; thus in the accompanying example, the B acts in a dominant relation to E, the E bears a dominant relation to A, the A has a dominant relation to D, the D stands in dominant relation to G, and the G to C.



590. A dominant 7th-chord built upon each of these tones may be resolved normally, strictly according to the key of **C,** and without destroying the final effect of C and the C-chord as the **point of repose,** thus:



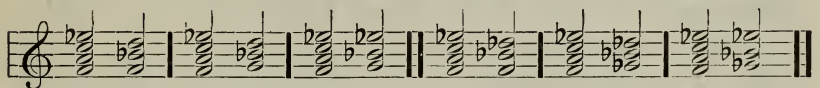
Each one of these dominant 7th-chords may be regarded as a passing dominant 7th-chord,[1] used without abrogating the finality and tonality of **C.**

591. It will be remembered that every major and minor chord has its own **point of repose,** which is entirely independent of the key or the tonic of the key in which the major or minor chord may belong. (See 81.)

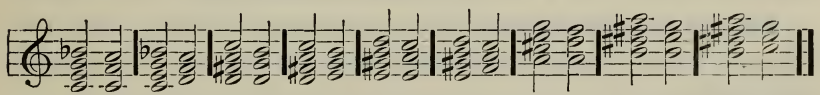
[1] See 543–549.

592. Again, the above passage may be regarded as consisting of brief transitions into *e*, *a*, *d*, **G**, and ending in **C**.

593. 4 of the scale cannot have one of these passing dominant 7th-chords built on it, because none of the commonly used resolution-chords of this passing dominant 7th-chord belong to the key of **C**.



In these six commonly used resolutions, none of the resolution-chords belong to **C**; but the dominant 7th-chords built on the other notes in **C** may resolve into one or two chords, which do belong to **C**; thus, in :



each of these resolution-chords belongs to **C**, and these dominant 7th-chords may precede them, although the main tonality is that of **C**.

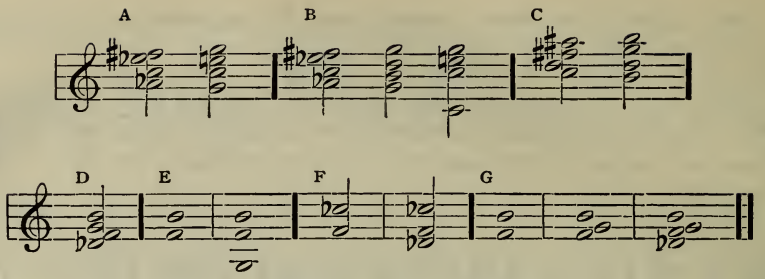
594. In harmonic minor keys, passing dominant 7th-chords can occur on 1, 2, and 3; and in the normal minor upon 1, 2, 3, 4, and 7.

When dominant 7th-chords are used in this manner, they are of but passing importance, and are in reality passing-chords,[1] causing brief modulations or transitions.

FURTHER EXPLANATION OF THE AUGMENTED SIXTH-CHORDS

595. The three-five-augmented-6th-chord may be regarded as the result of a combination of upward and downward leading-tones; thus the chord A♭–C–E♭–F♯ (A, p. 170), which is often found as a passing-chord in **C**, contains C, the tonic; A♭, the downward leading-tone to G; E♭ (or D♯), the upward leading-tone to E; and F♯, the upward leading-tone to G.

[1] See 543–549.



596. If the chord resolves as at B, the A♭, C and E♭ may be regarded as downward leading-tones (the A♭ to G, the C to B, and the E♭ to D), and the F♯ as an upward leading-tone.

597. The three-augmented-6th-chord is capable of the same explanation, only the Fifth of the chord is left out.

598. In the two-augmented-four-augmented-6th-chord (C), the C is a downward leading-tone, while the F♯ and A♯ are upward leading-tones.

599. In the three-augmented-four-augmented-6th-chord (D), if the two tones B–F be played together, then the G added, as at E, a dominant 7th-chord on G results; if the two tones B (C♭)–F be played, and D♭ added, as at F, the dominant 7th-chord on D♭ results.

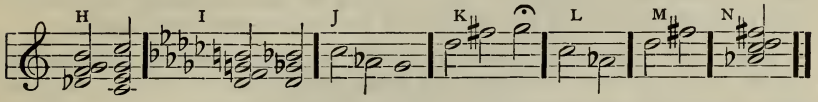
Now to the tones B–F, add both dominants (G–D♭), as at G, and the chord which results is a three-augmented-four-augmented-6th-chord.

600. Again, in the ordinary resolution of that chord, we see, at H, G the dominant, D♭ and F downward leading-tones, and B the upward leading-tone. At I, the D♭ is the dominant of the key; while the G and B are downward leading-tones, and the F an upward leading-tone.

601. A still further explanation of the three-augmented-four-augmented-6th-chord is this:

In the "Evolution of the Art of Music," by Sir Hubert Parry, the author, in the second chapter, shows that such diverse peoples

as the Greeks, Japanese, and Javanese, in their melodic systems of music, used as a common cadence this progression noted at J.

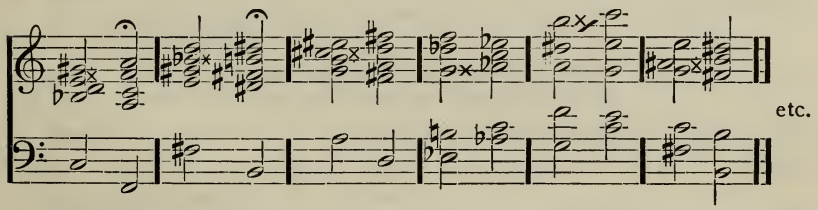


The G being the tonic, the A♭ is a downward leading-tone, and the G is their dominant. These peoples think their progressions **downwards.** In the modern systems of harmony our cadence is this same relation of sounds thought **upwards** as at K : G the tonic, F♯ the upward leading-tone, and D the dominant.

Add the old dominant and downward leading-tone (L) to our dominant and upward leading-tone (M), and the result is an augmented-four-augmented-6th-chord (N).

602. Again, any tone in an augmented 6th-chord may be regarded as an upward-tending leading-tone to a new Root or tonic.

Then the dominant of this newly suggested key or chord may be added, giving excellent new chords, which might be regarded as altered dominant 9th-chords ; thus :



In each case, the tone regarded as upward-tending leading-tone to a new Root is marked with "x." (See Chapter XIV.)

EXERCISES IN EAR-TRAINING

603. When major or minor chords (which have **points of repose**) progress into other consonant chords, the students are to discover how far apart these **points of repose** are. Thus if the C-major chord, in any form, should progress into the A♭ major chord in any form, the **point of repose** has shifted down a major Third, from C to A♭, and, if the first chord is known, one sees at once what the second chord is.

604. When a consonant chord progresses into a dissonant chord, or vice-versa, when a dissonant chord progresses into a consonant, the hearing should

be carefully trained so that the student will be enabled to tell what tone or tones are common to the two chords, and how far the other tones move; and then a careful mental analysis must be made of the constituent intervals in each chord, thus enabling him to know all the progressions from hearing.

605. The augmented 6th-chords should be used in contrast with the unaltered dominant 7ths, and with the other chords from which they may be derived, using the augmented 6th-chords and their resolutions.

This practice is to be continued until the student can distinguish these chords from all others.

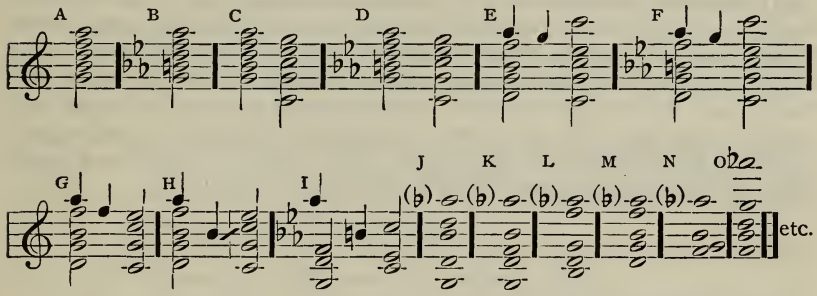
Appoggiaturas, suspensions, anticipations, passing-tones, and passing-chords are easily detected, and will require but little practice. Considerable practice in listening to harmonic figurations will be necessary, to enable the student to detect and indicate the harmonic mass out of which the figurations are made. The detection of passing dominant 7ths and the leading-tones (upward or downward tending) will require no special work.

Persistent practice in all these methods of listening will eventually give a perfect ear and a genuinely esthetic, intellectual, and artistic appreciation of harmonic possibilities, the real framework of the Art of Music.

CHAPTER XIV

DOMINANT NINTH-CHORDS

606. A dominant 9th-chord is simply a dominant 7th-chord with an interval of a Ninth from the Root added. In the major key this Ninth is major, while in the minor key it is minor.



At A we have the dominant 9th-chord in the key of C; at B the dominant 9th-chord in the key of *c*.

607. The first of these chords is termed the Dominant Major 9th-chord. The second chord is termed the Dominant Minor 9th-chord.

608. The dominant minor 9th-chord frequently appears in the major keys.

609. The normal resolution of these two dominant 9th-chords is the same as the dominant 7th-chords, as at C and D.

610. More commonly the Ninth resolves directly down to the Root of the dominant 7th-chord before the other tones resolve, as at E and F, and the effect is in reality a suspension.

611. Sometimes the Ninth will skip to another tone in the dominant 7th before the entire chord resolves, as at G, H, and I.

The dominant 9th-chords are seldom used with the Ninth as the lowest tone, but may be freely used in the other inversions. No matter in what form these chords are used, the Ninth generally remains at the distance of a Ninth from the Root of the chord, generally in the soprano, as in the remaining six examples.

612. Like the dominant 7th-chord, the Fifth of the dominant 9th-chord is very frequently left out.

613. A 9th-chord may be made from any kind of 7th-chord (which is occasionally done); yet all these 9th-chords, including the dominant 9ths, are simply suspensions, which may resolve with more or less freedom, the same as all other suspensions, the Ninth being the tone which is "suspending."

The student should carefully review the subject of Suspensions. It will be well also to review what was said concerning Anticipations, since these are frequently used in connection with the dominant 9th-chord just as they appear with the dominant 7th-chord. In fact, all that has been said about the dominant 7th-chord and about the 7th-chord on 7 of the scale, applies in considerable measure to the dominant 9th-chord. All the tones included in both of the former chords appear in the latter. The same general principles as to chromatic alteration also apply.

The student can find particularly suggestive examples of the use and chromatic alteration of the dominant 9th in all the scenes of Wagner's "Ring of the Nibelungen" in which the Rhine-Daughters appear. The characteristic song of the Rhine-Daughters begins with a dominant ninth, resolved in the conventional way. As the story proceeds, the composer finds occasion to vary the emotional expression of this theme. The result is probably as striking and concrete a set of examples of this chord's use as could be found, in a single work, for any of the subjects treated in text-books on Harmony.

CHAPTER XV

TONE-COLOR

614. Every consonant chord, and every major and minor key, has its own individuality of tone-color which is never duplicated in any other chord or key, no matter how close the relation may be. Play a simple piece of music, a few measures of genuinely soulful music, in the correct key, and then in another key; it will be immediately noticed that the tone-color in the other key does not give just the right effect. What causes this difference in tone-color is not explainable; yet, as a fact, it exists.

615. The key of **C** and the major chord on C are commonplace and characterless, the key having but restricted capabilities for varied tone-color. At the other extreme of the Circle of Keys is **F♯**, full of character, great tone-color, rich mellowness and brilliancy combined.

As the key of C is left, going through the sharps around the Circle of Keys to the right, brilliancy and brightness are gradually added.

As the key of **C** is left, going through the flats, towards the left in the Circle, mellowness and softness are gradually added.

When G♭ (or F♯) is reached, it is found to contain a rich combination of the qualities of all keys with fewer flats or sharps.

616. The key of **C** has as tonic chord C–E–G, very commonplace; as dominant the G major chord, with a little more brightness; and as sub-dominant the F major chord, a little softer in tone-color.

617. The key of **G** still retains the commonplace C major chord as sub-dominant, the G major chord as tonic, but adds a little more brightness in its dominant chord, the D major.

618. The key of **D** entirely eliminates the commonplace C major chord, retains the G major chord as sub-dominant, has the brighter D major chord as tonic, and adds the A major chord with its richer brightness.

619. The key of **A** has the richness and brightness of the A major chord as tonic, retains the more commonplace brightness of the D major chord as sub-dominant, but adds the greater richness and brightness of the E major chord as dominant.

620. The key of **E** drops out the D major chord; has as sub-dominant the

A major chord with its brightness, as tonic the E major chord with its warmth of brightness, and as dominant the brightest warmth of the B major chord.

621. The key of **B** retains the bright richness of the E major chord as sub-dominant, as tonic has the greatest brightness of the B major chord, and adds as dominant the richest mellowness of the F♯ or G♭ major chord.

622. On the opposite side of the Circle of Keys, **F** has the commonplace C major chord as dominant, the slightly softer F major chord as tonic, and the still softer quality of the B♭ major chord as sub-dominant.

623. The key of **B♭** drops out the commonplace C major chord, retains the F major chord as dominant, has the softer quality of the B♭ major chord as tonic, and adds the softer mellowness of the E♭ major chord as sub-dominant.

624. The key of **E♭** retains the softer quality of the B♭ major chord as dominant, the mellowness of the E♭ major chord as tonic, and adds the still richer mellowness of the A♭ major chord as sub-dominant.

625. The key of **A♭** retains the mellowness of the E♭ major chord as dominant, has the deeper mellowness of the A♭ chord as tonic, and adds the great wealth of mellowness of the D♭ major chord as sub-dominant.

626. The key of D♭ major retains the qualities of the A♭ major chord as dominant, has the great mellowness of the D♭ major chord as tonic, and adds the G♭ major chord with its greatest degree of mellowness, its greatest richness and softness, as sub-dominant.

627. The key of G♭ (or F♯) retains the exquisite qualities of the D♭ major chord as dominant, the completeness of the G♭ major chord as tonic, but adds the extreme of rich brilliancy of the B major chord as sub-dominant.

628. The key of **C** seems to be the bridge where character and tone-color are at the lowest point, and the key of **G♭** the bridge where all the power and intensity of character and tone-color culminate.

629. It should be noticed that as the key of **C** is left, going forwards through the keys with sharps, the dominant chords become richer in quality; and in contrast, as **C** is left, going towards the keys with flats, the sub-dominant chords become richer in quality.

The student should listen for the tone-color in all exercises, and in all compositions he may study. As training-exercises select a number of pieces such as the Chopin Preludes, and the Chopin Nocturnes, the Woodland Sketches (MacDowell), the A major sonata, first movement (theme and variations) (Mozart), and the slow movements of the Beethoven sonatas, playing these compositions in various keys, in contrast with the correct original key, listening carefully to detect the differences of tone-color of the various keys.

630. Tone-color is difficult to define, and still more difficult to describe, yet it is a fact which is easy of discernment. It is as definite as the odor of a rose or of a sprig of lilacs; and the differences in the various keys are as marked as the different odors of beautiful flowers. The greatest powers and

pleasures of musicianship are a result of the subtle sensibility to exquisite nuances in tone-color.

631. The minor keys and chords partake of the tone-color of various major chords, and no minor chord or minor key is as commonplace as the C major key and chord.

632. Each minor chord borrows its tone-color from three major chords: the tonic major chord, the relative major chord, and the major chord whose Third and Fifth are the same tones as the Root and Third of the minor chord.

Thus the A minor chord is a combination of the tone-colors of the A major, the C major, and the F major chords.

The D minor chord partakes of the qualities of the D major, the F major, and the B♭ major chords.

The G minor chord partakes of the qualities of the G major, the B♭ major, and the E♭ major chords.

The C minor chord borrows from the C major, the E♭ major, and the A♭ major chords.

The F minor chord borrows from the F major, the A♭ major, and the D♭ major chords.

The B♭ minor chord borrows from the B♭ major, the D♭ major, and the G♭ major chords.

The E♭ minor chord borrows from the E♭ major, the G♭ major, and the B major chords.

The A♭ minor chord (or G♯ minor) borrows from the A♭ major, the B major, and the E major chords.

The C♯ minor chord borrows from the D♭ major, the E major, and the A major chords.

The F♯ minor chord borrows from the F♯ major, the A major, and the D major chords.

The B minor chord borrows from the B major, the D major, and the G major chords.

The E minor chord borrows from the E major, the G major, and the C major chords.

633. The richest minor chords are the E♭ minor, the C♯ minor, and the B♭ minor, as they borrow from major chords which are very rich in tone-color.

634. It is self-evident that the minor keys will be rich in tone-color, since their tonic, dominant, and sub-dominant chords offer so many shades of tone-color. Thus, for instance, the harmonic minor key of *c* has as tonic the C minor chord, which borrows from C major, E♭, and A♭ major. As sub-dominant it has the F minor chord, which borrows from the F major, the A♭ major, and the D♭ major chords. As dominant it has the G major chord, with its own quality.

635. The normal minor keys are still richer in tone-color. For instance,

the key of *c* normal minor has tonic chord C–E♭–G, which borrows from C major, E♭ major, and A♭ major; as sub-dominant the F minor chord, which borrows from F major, A♭ major, and D♭ major; as dominant it has the G minor chord, which borrows from G major, B♭ major, and E♭ major.

636. As composers use major and minor chords, modulations of longer or shorter duration, passing-chords, etc., the play of tone-color becomes enormously varied and significant.

The element of discord is added by the dissonant chords, always striving towards concord, always seeking a final **point of repose.**

637. A great composition is, therefore, a tone-picture made up of numberless details of consonance and dissonance; full of innumerable shadings and combinations of tone-color; a message from the brain and heart of a genius to humanity, expressing a wide range of emotions; a great art-product of human mind and human feeling.

TECHNICAL TERMS USED IN CHAPTERS XI TO XV

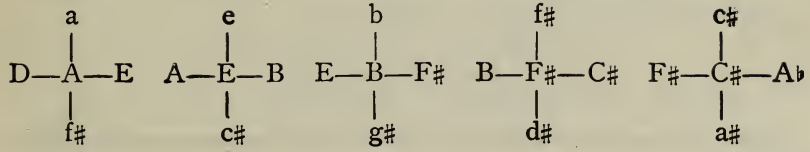
Altered Dominant 7th-Chords.
Augmented 6th-Chords.
Resolution-Chord.
Mental Modulation.
Mental Transposition.
Appoggiaturas.
Accompanying Tones.
Passing-Tones.
Passing-Chords.
Organ-Point.
Pedal-Point.
Sustained Tone.
Harmonic Figuration.
Anticipation.
Foreign Progression.
Suspensions.
Three-Five-Augmented-6th-Chord.
Three-Augmented-6th-Chord.
Three-Augmented-Four-Augmented 6th-Chord.
Two-Augmented-Four-Augmented-6th-Chord.
Downward Leading-Tones.
Dominant 9th-Chords.
Tone-Color.

APPENDIX I

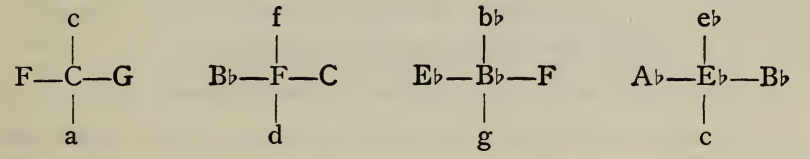
SECTION A

THE CIRCLE OF KEYS

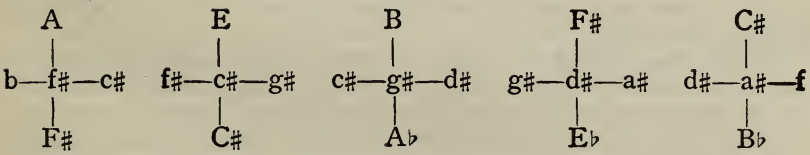
638.



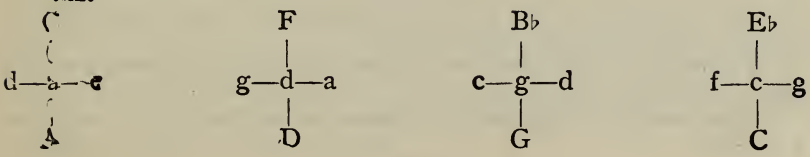
639.

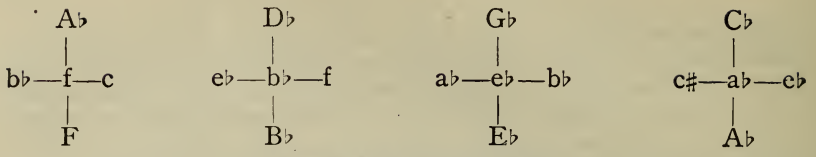


640.



641.





In the centre of each group is the principal key; to the left is the subdominant; to the right, the dominant; in the case of major keys occupying the centre of the group, the tonic minor is over the principal key, with the relative minor under. In the case of minor keys occupying the center of the group the relative major is over this principal key, with the tonic major beneath.

642. Chart showing relation of all keys to **C**.

G♭–*e*♭–E♭–*c* *a*–A–*f*♯–F♯
b–D–*d*–F–C–G–*e*–E–*c*♯
B–*g*♯–A♭–*f* *g*–B♭–*b*♯–D♭

643. A chart showing these relations in a different manner might be arranged thus:

b–*f*♯–*c*♯–*a*♭–*e*♭–*b*♭–*f*–*c*–*g*–*d*–*a*–*e*–*b*–*f*♯–*c*♯
C♭–G♭–D♭–A♭–E♭–B♭–F–C–G–D–A–E–B–F♯–C♯
a♭–*e*♭–*b*♭–*f*–*c*–*g*–*d*–*a*–*e*–*b*–*f*♯–*c*♯–*g*♯–*d*♯–*a*♯

C is related to *e*♭ through E♭ and further, because the second **quality tone** in *e*♭ is 7 in **C**.

C is related to G♭ for the same reason that F♯ is, as F♯ and G♭ are enharmonically the same.

C and **G** are relatively tonic and dominant keys.

C and *e* are related through **G**, and moreover, the tonic in *e* is the first quality tone in **C**, the first **quality** tone in *e* is 5 in **C**, 4 in *e* is the second **quality** tone in **C**, the dominant in *e* is 7 in **C**, and 6 in *e* is tonic in **C**.

C is related to **E** through *e*, and further, because 1 in **E** is 3 in **C**, 4 in **E** is 6 in **C**, and 5 in **E** is 7 in **C**.

C and *c*♯ are related through **E**, and further, because 3 and 6 in both scales are the same sounds (**quality** tones) and 7 in *c*♯ is enharmonically 1 in **C**.

C and **F** are relatively tonic and subdominant keys.

C is related to *d* through **F**, and further because 3 in *d* is 4 in **C**, 4 in *d* is 5 in **C**, 5 in *d* is 6 in **C**.

C is related to **D** through *d*, also through **G**, and further because 4 in **D** is 5 in **C**, 5 in **D** is 6 in **C**, and 6 in **D** is 7 in **C**.

C is related to *b* through **D**, and further because 1 in *b* is 7 in **C**, 4 in *b* is 3 in **C**, and 6 in *b* is 5 in **C**.

C is related to *g* through **G**, and further because 1 in *g* is 5 in *c*, and 4 in *g* is 1 in **C**.

C is related to B♭ through *g*, and further because 5 in B♭ is 4 in C, 6 in B♭ is 5 in C, and 7 in B♭ is 6 in C. C is also related to B♭ through F.

C is related to *b*♭ through B♭, also through F, also through *f*, and further because 5 in *b*♭ is 4 in C, and 7 in *b*♭ is 6 in C.

C is related to D♭ through *b*♭, also through *c*♯, and further because 3 in D♭ is 4 in C, and 7 in D♭ is 1 in C.

C is related to *f* through F, and further because 1 in *f* is 4 in C, 5 in *f* is 1 in C, and 7 in *f* is 3 in C. C is also related to *f* through *c*.

C is related to A♭ through *f*, and further because 3 in A♭ is 1 in C, 6 in A♭ is 4 in C, and 7 in A♭ is 5 in C.

C is related to *g*♯ through A♭, also through B, and further because 3 in *g*♯ is 7 in C, 6 in *g*♯ is 3 in C, and 7 in *g*♯ is enharmonically 5 in C.

Finally C is related to B through *g*♯, through E, through *b*, and through F♯, and further because 1 in B is 7 in C, and 4 in B is 3 in C.

644. It is thus readily seen that the Circle of Keys is in reality a large family, in which no single member stands alone; on the contrary, every key bears a close relation to every other key, the common tones which appear in the above explanation being important tones in each pair of keys. Naturally, this fact of relationship being established between C and all other keys, it is apparent that any one key will have corresponding relationship with the others. This wide relationship of keys has been used very frequently by the composers to great advantage. (See Chapter XV; also Chapter III.)

SECTION B

DEMONSTRATION OF INTERVALS

[Continuation of 144]

645. The false doctrine taught for so many years that all augmented and diminished intervals are dissonant, has led to many other false statements, and has caused the most important fact in the whole subject of musical theory (**the point of repose**) to be almost entirely ignored. As an instance, the augmented common chord is said to be dissonant because it contains the interval of an augmented Fifth.

This is false and misleading, as can be proved by very little testing. For instance, in C–E–G♯, if the interval C–E is played, it will sound very pleasant; if the interval E–G♯ is heard it will be as good as C–E, and if the interval C–G♯ (A♭) is heard alone, it will be found as good as the other two intervals; all three being musical and consonant. Yet these three tones, when sounded together, cause a very harsh discord.

With the diminished chord, B–D–F, B–D is consonant, D–F is consonant, B–F is a mild dissonance, and the effect of the entire chord is that of a mild discord.

Here we have a mildly dissonant chord containing a mildly dissonant interval, as against a very harshly dissonant chord, which contains **no** dissonant interval.

It is very manifest, then, that the dissonant qualities in chords must sometimes result from some other factor than dissonant intervals.

646. The explanation is simple. In the augmented chord, C–E–G♯, for instance, if the C–E alone is played, the ear accepts C as the **point of repose**; if E–G♯ is played alone, the ear accepts E as the **point of repose**; and if C–G♯ (A♭) is played alone, the ear accepts G♯ (A♭) as the **point of repose.** Now when all the tones are heard simultaneously, **each tone strives to be the finality** (**the point of repose** for the **whole**), and chaos (harsh dissonance) is the result.

647. Play C–E–G♯, and then C–E♭–G♯, and the last chord is eminently pleasing, because the conflict of the **points of repose** will be ended, all the tones now pointing to one common generator G♯ or A♭.

648. If C–E–G♯ is a discord on account of the augmented Fifth C–G♯, then C–E♭–G♯ **must** also be dissonant, as it contains the same interval. As the last chord (C–E♭–G♯) is **not** a discord, the old theory is proven false.

649. A chord is dissonant for one or both of two reasons: a dissonant chord contains, first, a dissonant interval, or second, more than one **point of repose**; or both causes may be present together, a dissonant interval **and** more than one **point of repose.** We have seen that the augmented chord suggests three **points of repose.** The diminished chord contains no **point of repose,** but one dissonant interval. If C–E–G–B♭–D be played at the piano, it will be found to be only mildly dissonant. If C–F–B♭ be played at the piano, the effect will be a decidedly harsh discord. The first of these two groups contains four dissonant intervals, while the second group contains but one: C–B♭, C–D, E–B♭, and E–D are dissonant in the first group; and only C–B♭ in the second.

In the first, C–E–G–B♭–D, no tone will act as the **point of repose,** all tending to another tone (F) as finality. In the second group C–F–B♭, the F desires to be the **point of repose** and the B♭ demands supremacy. C "insists" upon F, and F, again, "insists" upon B♭; thus we have not only two **points of repose** which are in conflict with one another (F, B♭); but also two **insistent tones** (C, F). Thus the F is in conflict with itself, as a **point of repose** and as an **insistent tone.**

A large number of chords and tone-combinations might be offered in corroboration of these interesting and important facts, but lack of space forbids. Let the student carry out these experiments, and convince himself of the truth of the above statements.

AN EXPLANATION OF THE EFFECT OF MAJOR AND MINOR CHORDS

650. We have seen in Chapter IV (101–103) that the major common chord is **Nature's Concord,** and that it contains but one **point of repose.** We have seen that a combination of tones which contains more than one **point of repose** is a dissonant chord.

651. The minor chord contains two **points of repose,** and therefore, in the strictest sense, it is a discord. Thus in C–E♭–G, if the interval E♭–G be played alone, the ear will accept the lower tone E♭ as the **point of repose.** If the interval C–G be played alone, the ear will accept the C as the **point of repose.** If the interval C–E♭ be played alone, the ear suggests another tone (A♭) as the **point of repose.** Yet in the combination of tones C–E♭–G, the **point of repose** and the **insistent tone** of a major chord are present, and these two tones (C, G) overbalance the effect of the E♭, and give the balance of power to C as the final **point of repose.**

652. In proof of this, supply the tone which will merge with C–G. It will be E (not E♭), proving that the major chord is natural. Supply the missing tone when E–G is played, and it will invariably be C (not B). Hence, the minor chord is not natural (E–G–B). Persons who have had no musical training, and whose ears are not experienced in musical effects, invariably call the minor chord a discord; and it is the common practice of unsophisticated persons to speak of all discords as "**minors.**"

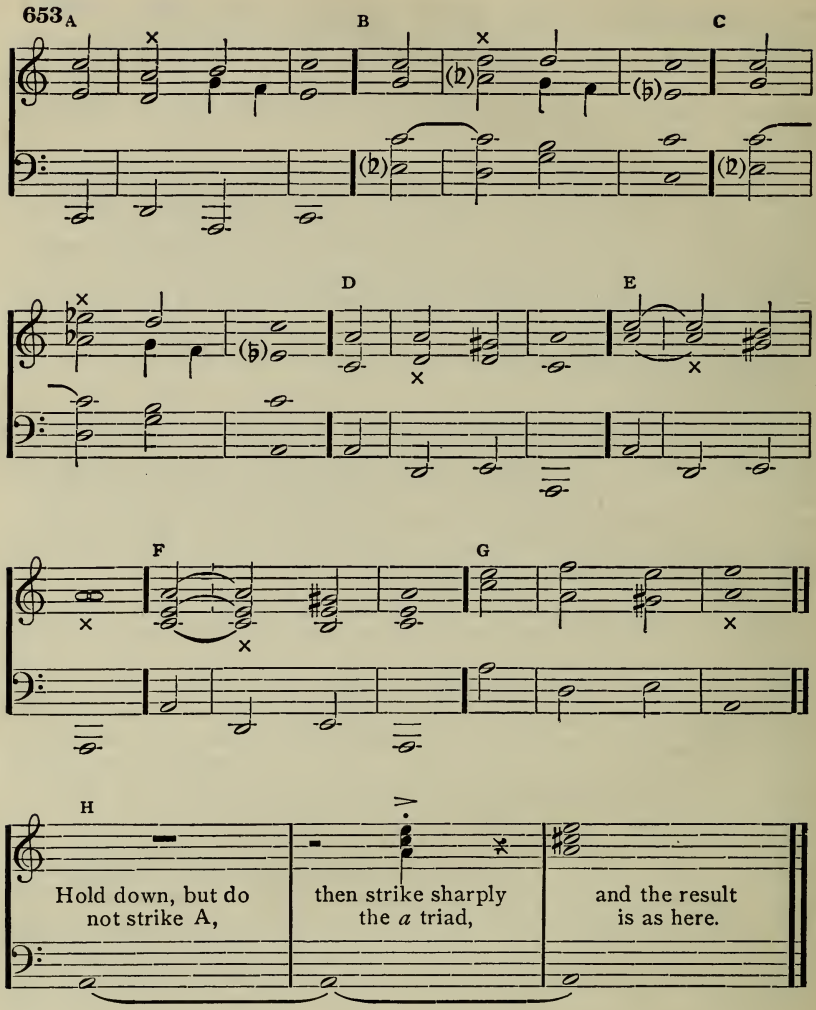
653. As interesting general evidence along this line of argument, the case of Bach and his predecessors, as well as that of some of his successors, may be taken. In the great majority of cases, in Bach's time, music written in the minor mode ended with a **major** chord. Again, music written in the major mode frequently ends with just the tonic and **quality tone** of the tonic chord; but music in the minor mode, when it ends with the tonic minor chord, usually shows all the tones of that chord. The composer's feeling prompts him to insert the Fifth, lest the ear demand another tone, different from the tonic, as the **point of repose.**

As a further proof of all these facts, we may take some musical citations and comments (page 184) from an untranslated German work "Musical Acoustics,"[1] by George Capellen, wherein are shown by experiments at the piano the truths for which we are arguing. "The **ear,** the **ear**" is his cry.

In all chords marked x the ear requires, and hears, the major Third (the major Third above the bass note of the chord). This upsets the traditional theory that "minor" chords are natural on 2 in the major mode, as well as on 1 and 4 in the minor mode.

At H, press the first note down silently; hold it throughout the experiment, and strike sharply the A minor chord written in the treble staff. The result will be the A major chord, as shown by the notes. The minor third C changes to the major third C♯.

[1] Musikalische Akustik, by Georg Capellen; Kahnt, Leipzig. We have been furnished with these additional proofs by the composer Albert A. Mack, who suggested their use in the present work and kindly supplied an English version of portions of the text.



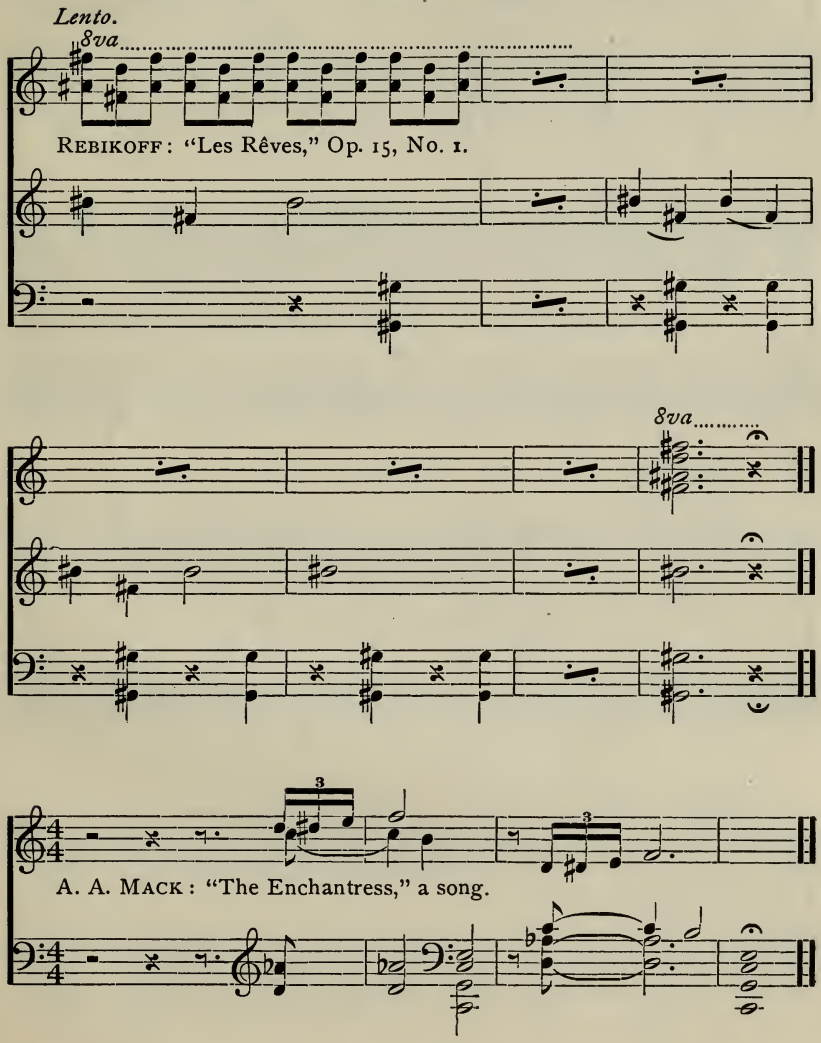
"One can be convinced of the dissonant quality of the minor chord, if one plays an ordinary cadence in *a*, and holds the last chord a little while. A fine ear will hear a constant shifting between major and minor, and if the note C (minor third) be released, the major quality of the chord is at once established.

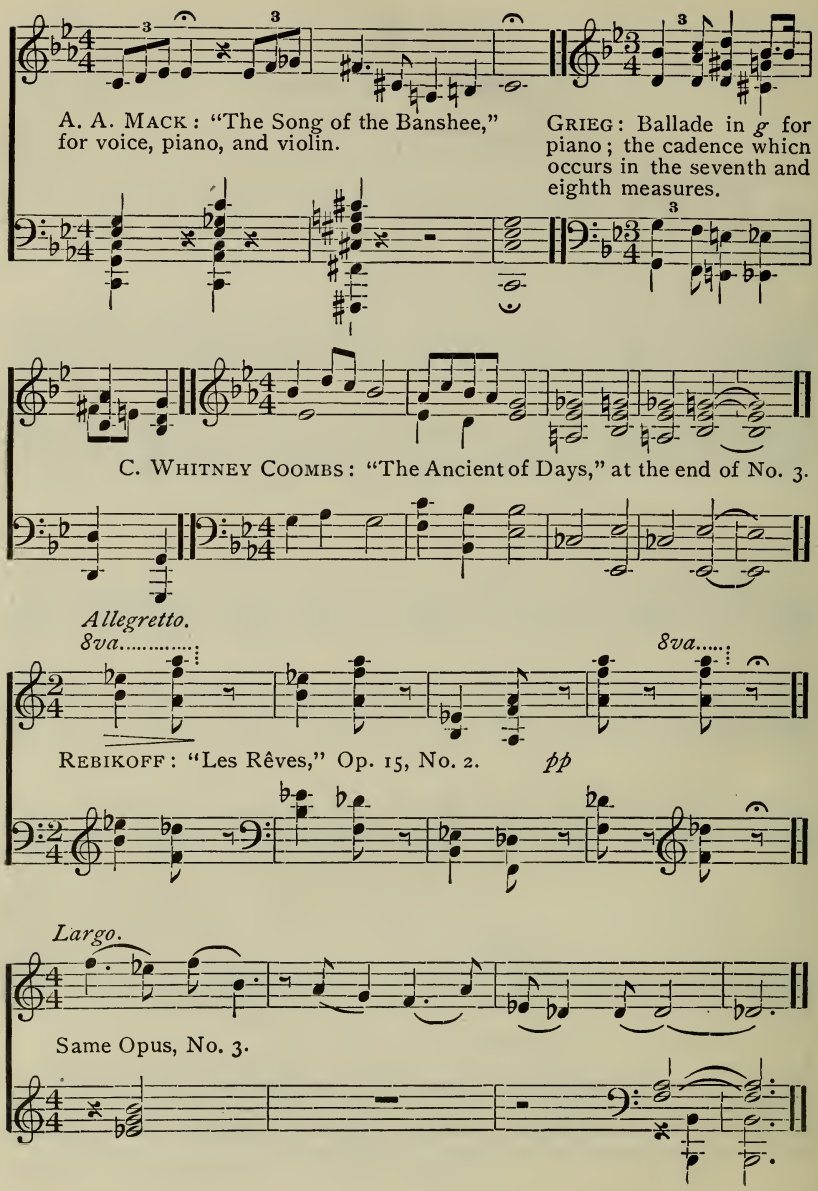
The truth of these experiments is found out by the instinctive preference for the major ending, especially with Bach and Handel."

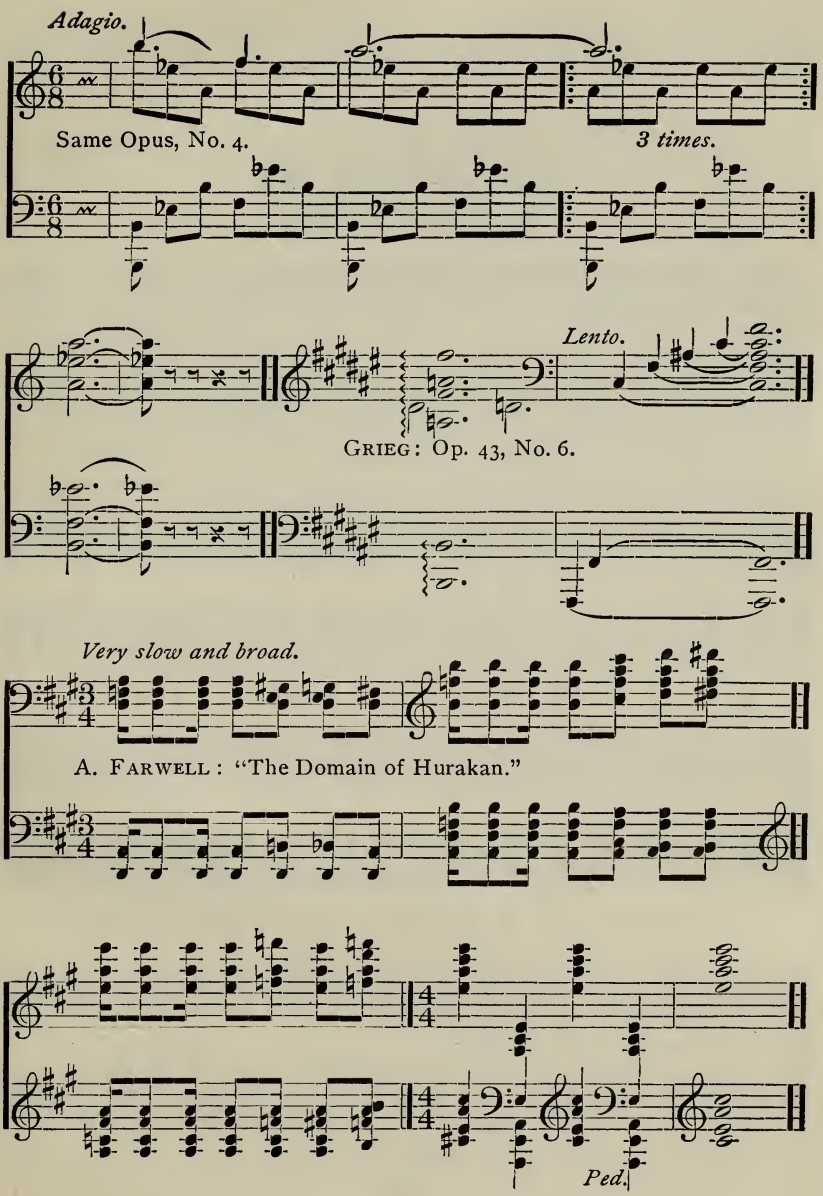
SECTION C

EXAMPLES OF CADENCES

[Continuation of 241]




A. A. Mack: "The Song of the Banshee," for voice, piano, and violin.
Grieg: Ballade in g for piano; the cadence which occurs in the seventh and eighth measures.
C. Whitney Coombs: "The Ancient of Days," at the end of No. 3.
Allegretto.
8va.....
8va.....
Rebikoff: "Les Rêves," Op. 15, No. 2.
pp
Largo.
Same Opus, No. 3.

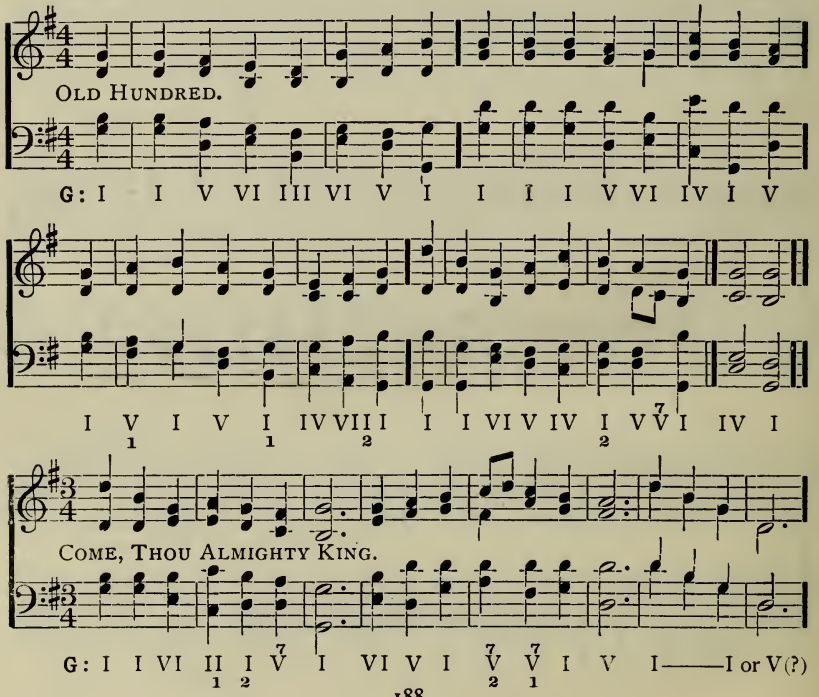

Adagio.
Same Opus, No. 4.
3 times.
Lento.
GRIEG: Op. 43, No. 6.
Very slow and broad.
A. FARWELL: "The Domain of Hurakan."
Ped.

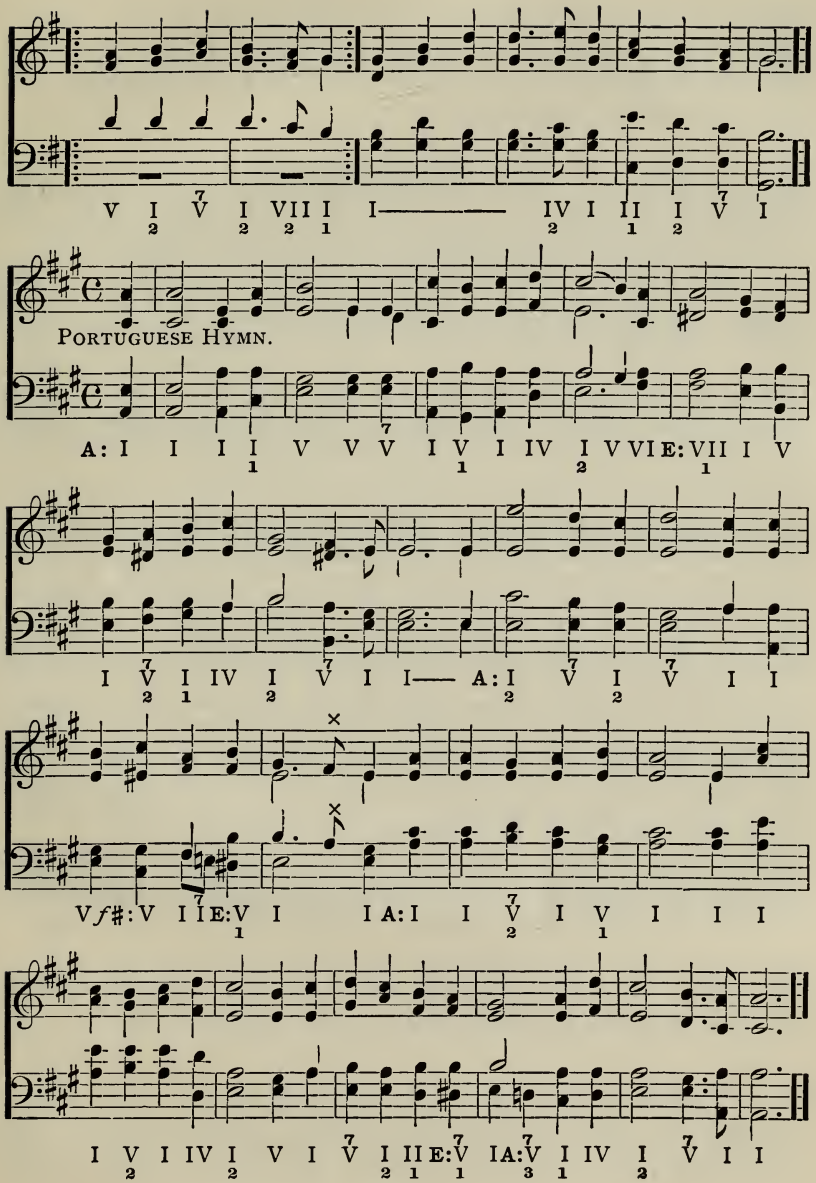
APPENDIX II

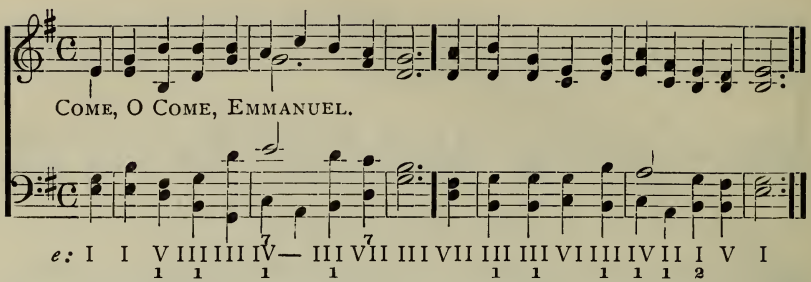
HARMONIC ANALYSIS

654. In making a harmonic analysis of compositions, one should notice whether any modulations are made, what kinds of chords are used, in which inversion the chords appear, etc. If one hymn-tune or choral were analyzed each day for a year, any intelligent person would then be able to analyze harmonically any piece of ordinary music. This is a very valuable practice, and will lead to musicianship more quickly than any one kind of work. No person really understands the English language if he cannot analyze a sentence; nor does he really understand music until he can readily analyze its language.

Following are four well-known hymns analyzed. See 655 for explanation.




V I V I VII I I IV I II I V I
PORTUGUESE HYMN.
A: I I I I V V V I V I IV I V VI E: VII I V
I V I IV I V I I A: I V I V I I
V f♯: V I I E: V I I A: I I V I V I I I
I V I IV I V I V I II E: V I A: V I IV I V I I



655. A Roman numeral indicates upon what degree of the scale the chord is found. The figure under this numeral shows in which inversion the chord appears; when not inverted, no figure is needed. The figure over the Roman numeral shows that such a chord is a 7th-chord. In the Portugese Hymn modulations are made into other keys; such keys are shown by the letter at the respective place. The tune "Come, O Come, Emmanuel" is in the normal minor key of *e*, and is analyzed in accordance with that key.

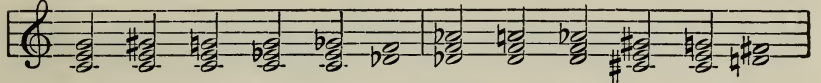
The following compositions are recommended for Analysis, the student or teacher selecting at will. The list is purposely made inclusive. Bach: 371 Four-Part Chorals (Breitkopf & Härtel, Popular Edition, No. 10.) Beethoven: Sonatas for Piano; two-hand or four-hand arrangements of the Symphonies. Schubert: Piano Sonatas; Songs; String Quartettes. Schumann: Songs; Etudes Symphoniques for piano; Romances for piano. Chopin: Nocturnes; Preludes; Barcarolle; Mazurkas. Franz: Songs. St.-Saëns: the G-minor piano Concerto; Symphonic Poems in piano arrangements. Wagner: "Tristan and Isolde" in piano score; "Die Meistersinger" in piano score. Tschaikowski: B♭-minor Concerto for piano; Symphonies and Overtures in piano arrangement. Brahms: Sonata op. 5, for piano; Intermezzi and Ballades for piano; Symphonies in piano score. Grieg: Piano Concerto; Ballade in form of Variations for piano; Violin and piano, and cello and piano Sonatas. MacDowell: "Sonata Tragica" for piano; Songs; Sea Pieces and New England Sketches. Richard Strauss: Songs; "Till Eulenspiegel"; "Don Juan." Elgar: "Dream of Gerontius"; "The Apostles." Also, works of composers of the French school, including Debussy, Pierné, and d'Indy.

The following works on Form are recommended: Lessons in Music Form, by Percy Goetschius; Musical Form, by Ebenezer Prout; Complete Musical Analysis, by A. J. Goodrich; Musical Form, by Ludwig Bussler. An excellent work for chord-analysis is "Harmonic Analysis," by Benjamin Cutter.

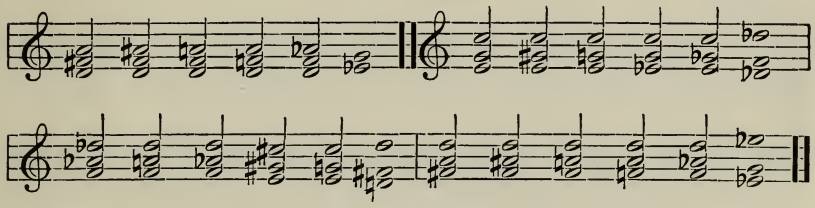
APPENDIX III

This Appendix is made up of a number of modern harmonic progressions of great possibility and promise. The student is to finish each, in as many forms as he can discover. Each exercise is to be carefully analyzed, and the relations of chords is to be discovered. Out of these fifty-eight exercises, hundreds of others may be built by making slight changes. The total of possibilities is simply immeasurable. These are offered as suggestions.

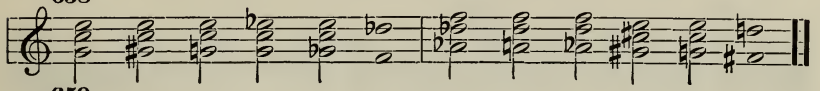
656



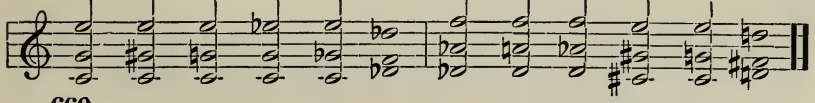
657



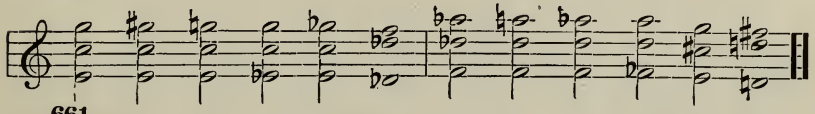
658



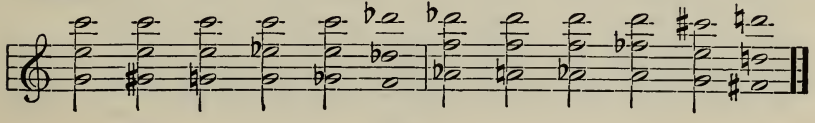
659



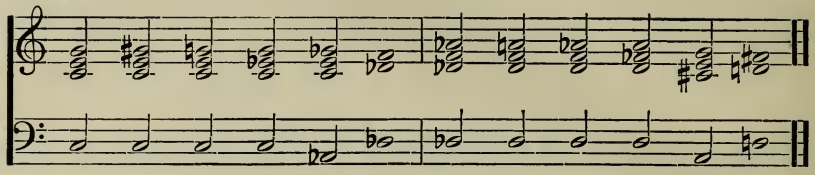
660



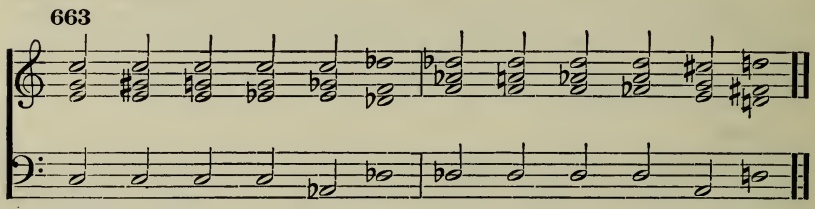
661



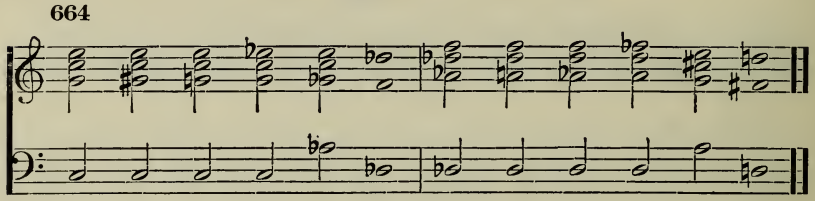
662



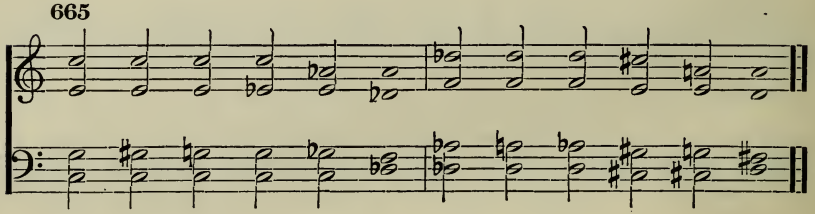
663



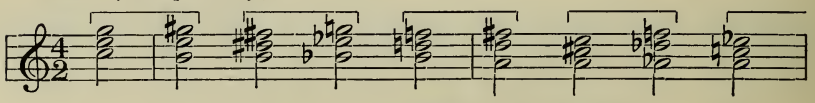
664



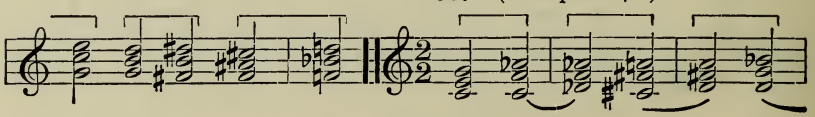
665



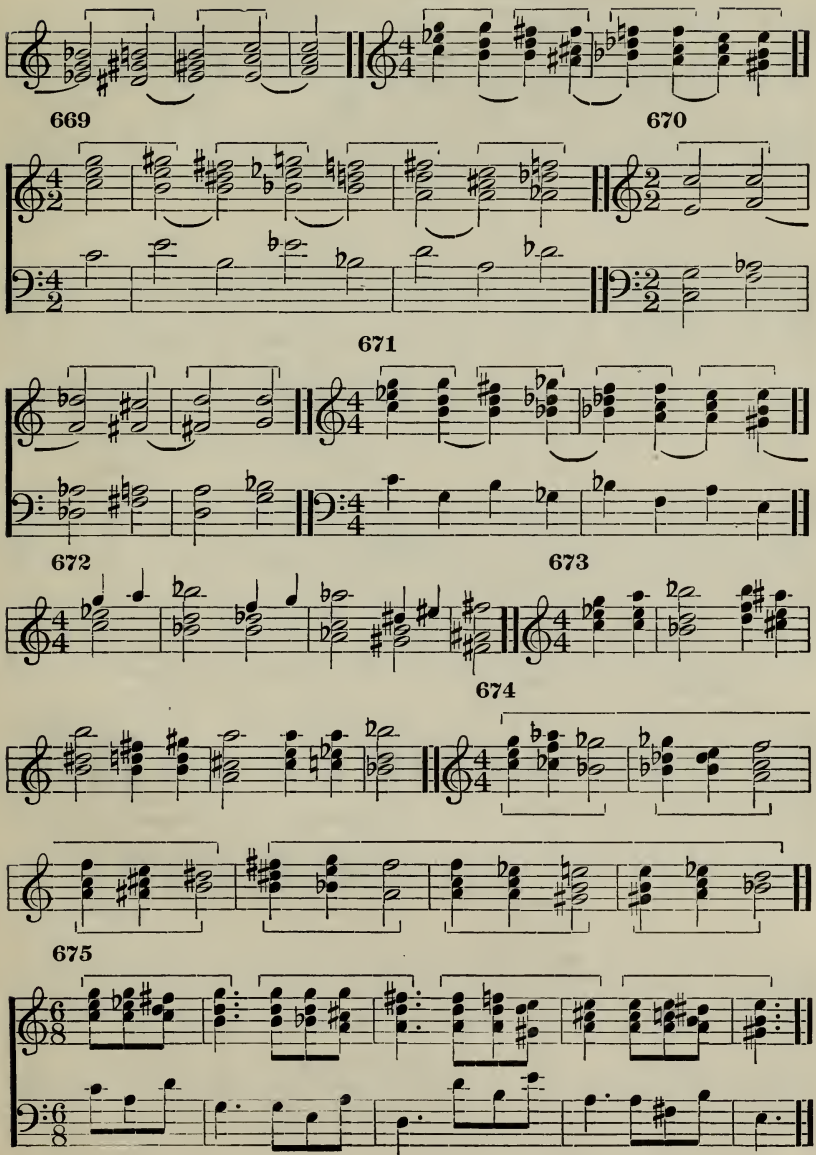
666 (Compare 669)

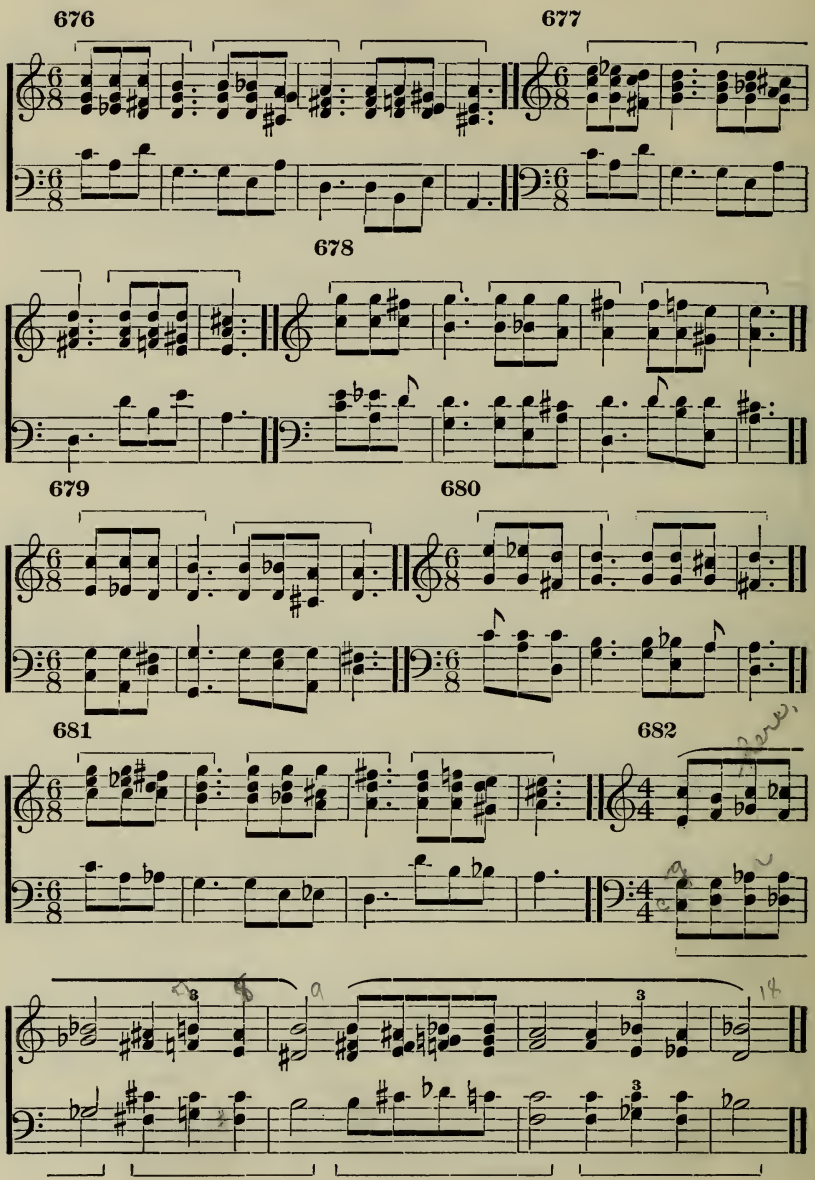


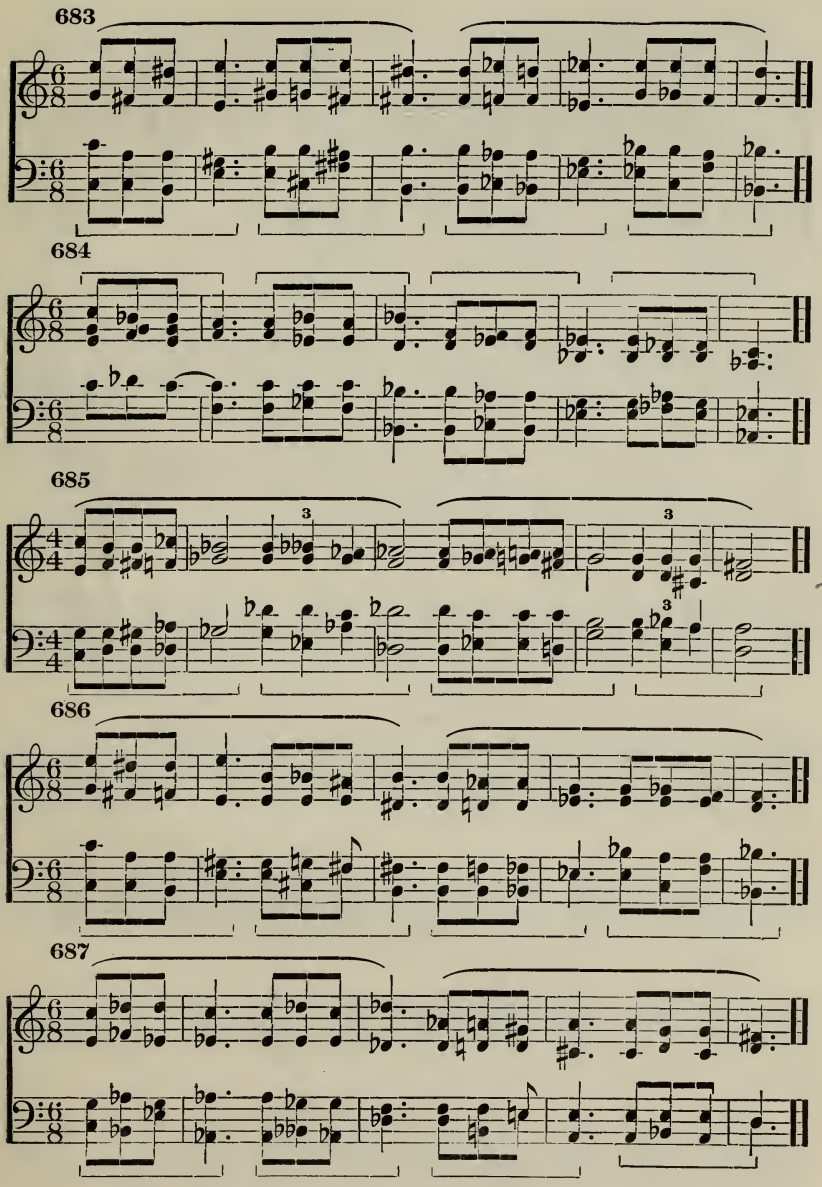
667 (Compare 670)



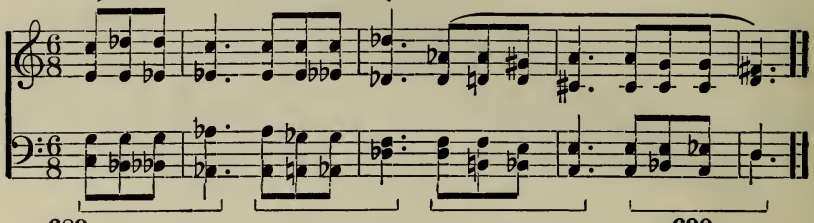
668 (Compare 671)



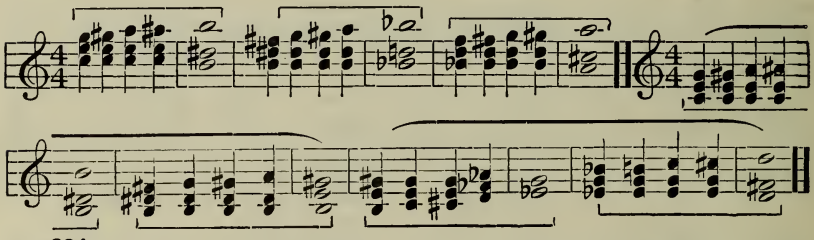

676
677
678
679
680
681
682


683
684
685
686
687

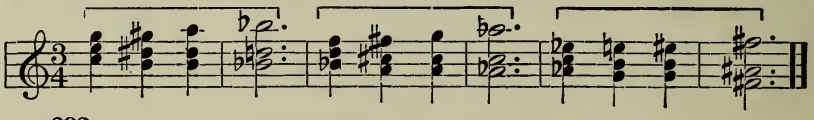
688



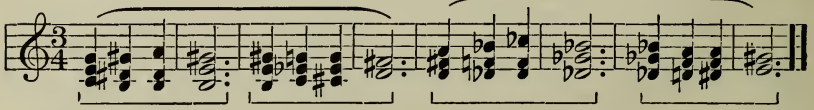
689 690



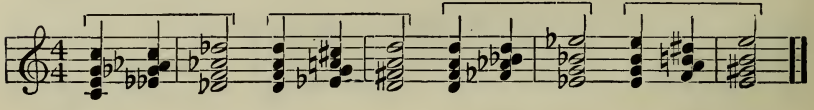
691



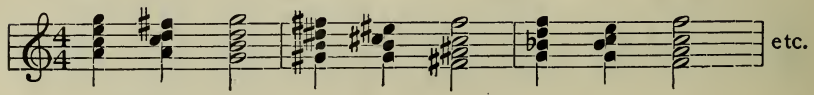
692



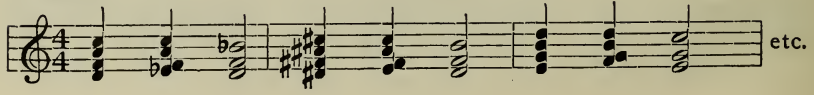
693

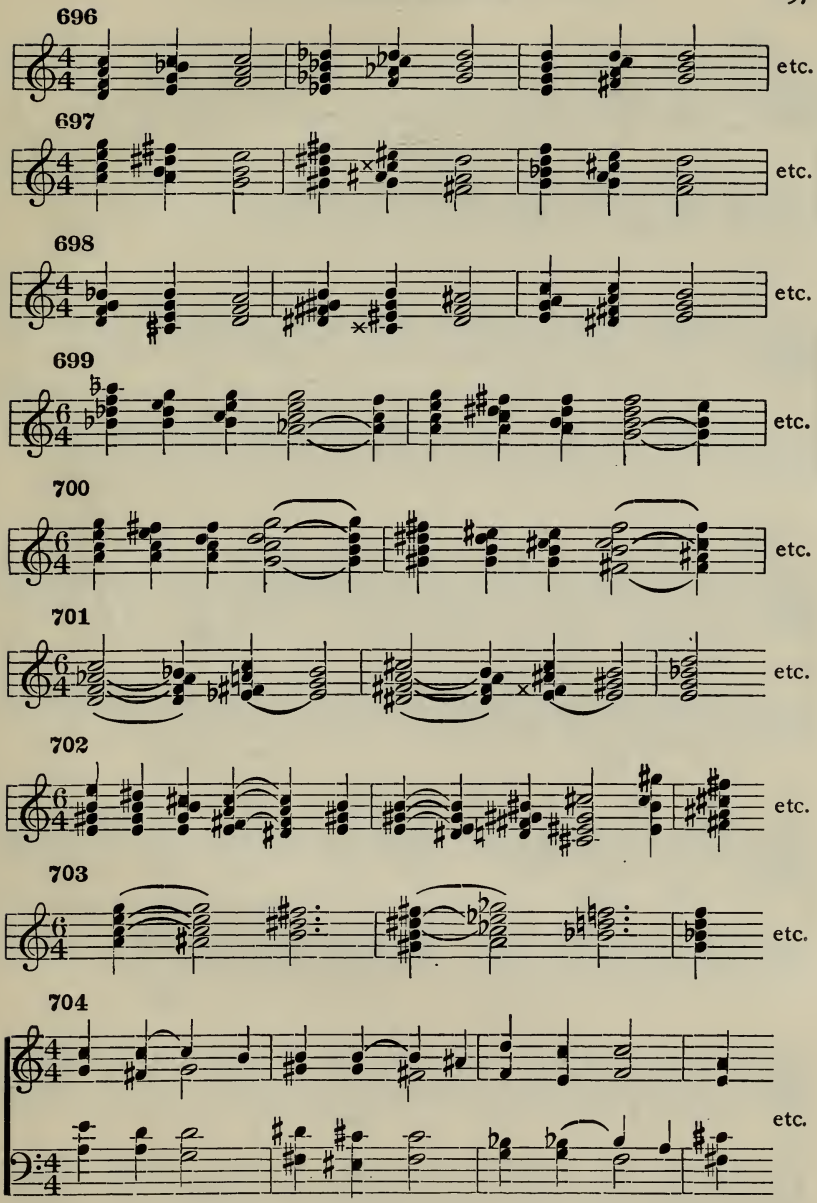


694

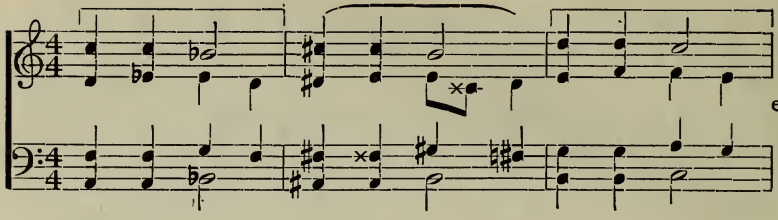


695

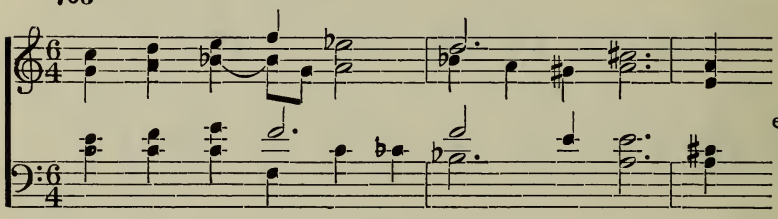



696
etc.
697
etc.
698
etc.
699
etc.
700
etc.
701
etc.
702
etc.
703
etc.
704
etc.

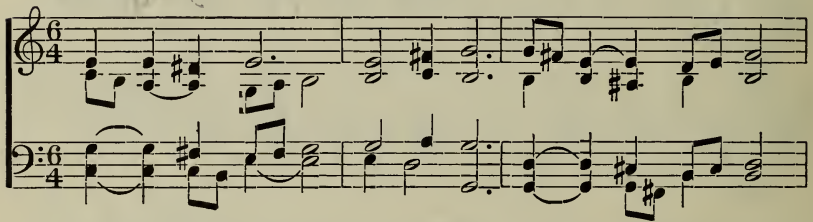
705

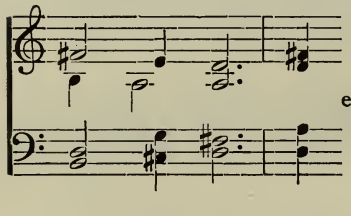


706

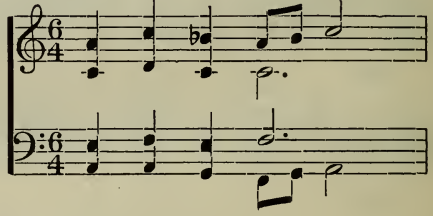


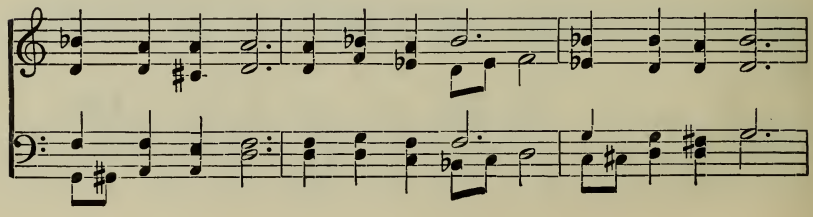
707

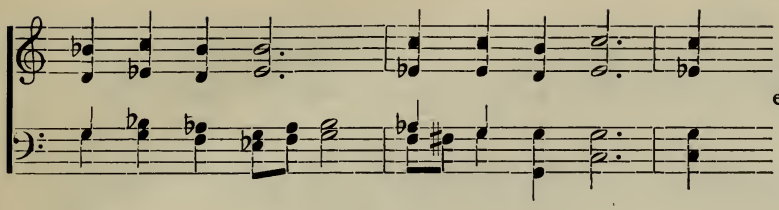




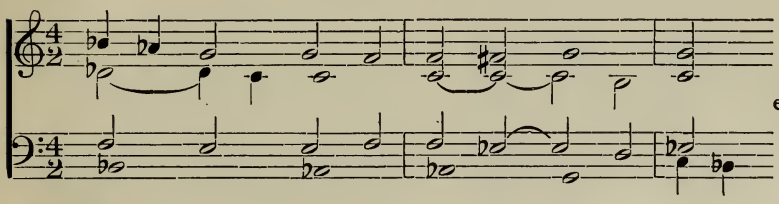
708



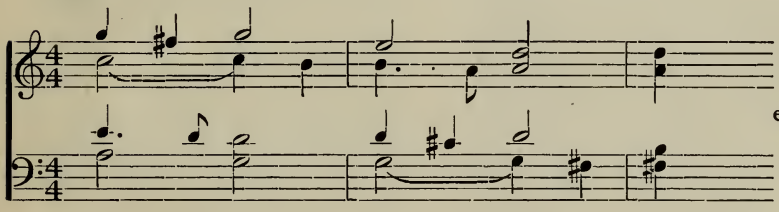




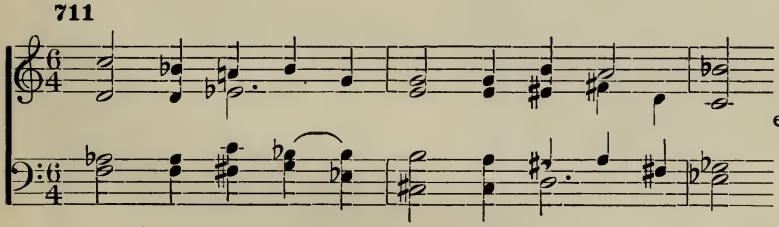
709



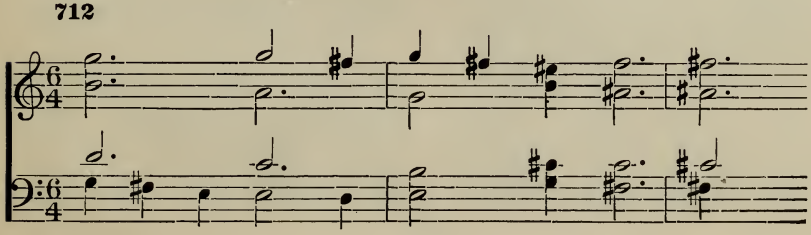
710



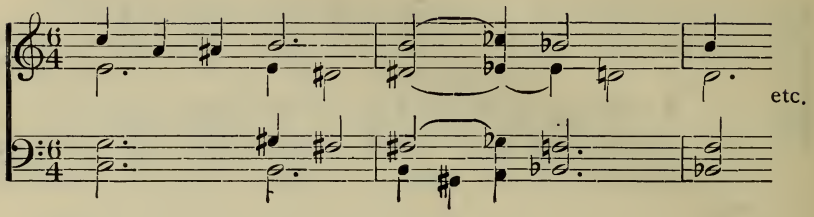
711



712



713



INDEX

This Index refers to sections

HARMONIC PART-WRITING

BY

W. A. WHITE

Author of "Harmony and Ear-Training"

THIS is a masterly presentation of the foundation of all composition — four-part writing. It does not confuse the student with theories nor distract his attention with an exposition of scales, intervals and chord material. Instead, it goes straight to the point in hand, which is carefully worked-out instruction in composition for four parts, vocal or instrumental.

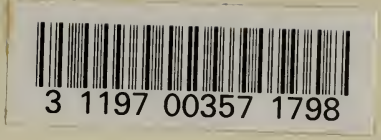
It is designed to follow after the student has mastered the first six chapters of "Harmony and Ear-Training." The two books, used together, provide a thorough and ideal course.

Professor White has succeeded in putting into these two books much of the vigorous and inspiring originality which distinguishes his teaching.

192 Pages. Cloth. $1.50

SILVER, BURDETT & COMPANY

BOSTON NEW YORK CHICAGO
SAN FRANCISCO ATLANTA DALLAS


3 1197 00357 1798

DATE DUE

APR 2 1 1980			
APR 1 6 RECD			
MAY 1 4 1980			
MAY 2 RECD			
JAN 2 1 1981			
[illegible]			
NOV 2 8 1997			
NOV 0 1 2006			
OCT 2 5 2006			
JAN 2 3 2013			

DEMCO 38-297